

**ACTUARIAL COSTING OF THE ROAD AHEAD:
A COMPARATIVE STUDY**

**EXECUTIVE SUMMARY
(Part I of III)**

**Prepared by William M. Mercer Limited
for the
Ontario Automobile Insurance Review**

June 1992

 **Ontario**

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June 30, 1992

Mr. Blair Tully
Deputy Minister
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Toronto, Ontario M7A 2H8

Dear Mr. Tully:

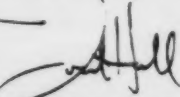
Re: Actuarial Costing Study of The Road Ahead:
A Comparative Study

We are pleased to present to you our report on the actuarial study dealing with the costing of The Road Ahead that we performed for the Ontario Automobile Insurance Review. The report consists of three parts:

- Part I - Executive Summary
- Part II - Actuarial Report
- Part III - Technical Appendix

We appreciate the opportunity to be of service to the OAIR, and we thank you for the excellent support and cooperation we have received from the professional staff at OAIR in conducting the study and producing this report.

Yours very truly,



Gordon M. Hall
Vice Chairman

attachments

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Part I – Executive Summary

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Introductory Note

This Executive Summary is the first of three volumes containing the results of a study conducted by William M. Mercer Limited (Mercer) for Ontario Automobile Insurance Review (OAIR).

About Mercer

Mercer is an international consulting firm which provides professional services to clients around the world in the fields of actuarial science, pensions, benefits, human resources, and insurance. In conducting this study Mercer draws on its extensive background and experience in automobile insurance in Canada and the U.S. The project team brings to this assignment substantial current Ontario-specific background that began with a 1987 study for the Ministry of Financial Institutions on the subject of automobile insurance classifications which was subsequently examined at a hearing in early 1988 before the Standing Committee on the Administration of Justice of the Ontario Legislature.

Mercer's involvement in Ontario automobile insurance continued through the lengthy hearings held by the Ontario Automobile Insurance Board (OAIB), on automobile insurance rates and classifications, and subsequently on the subject of alternative automobile accident compensation systems. After the passage of OMPP, our involvement continued as consultants to the newly created Ontario Insurance Commission (OIC), providing actuarial support services during the transition to OMPP. In the U.S., the project team's experience includes many years of direct involvement with all aspects of automobile insurance transactions in all jurisdictions, including contemporary service as actuarial consultants to regulatory authorities in more than a dozen states.

The Executive Summary

Although this Executive Summary (Part I) is designed to be a freestanding document, the reader should be aware that it is one of three parts, which together constitute the complete report. Part II, Actuarial Report, provides extensive background and explanation of our methodology and estimates. Part III, Technical Appendix, provides actuarial details of our analysis.

The Executive Summary is designed for those who wish to review the highlights of our work and the results we derive without technical review of the details of the methodology and the calculations of the various cost and premium components. Our hope is that by making this document available, reference to the remainder of the report will need to be made only by those who wish to understand the full derivation of our conclusions.

For ease of reference, the exhibits that accompany the text of the Executive Summary are grouped at the end of the text sections and are identified in the upper right hand corner with a numbering scheme that begins with ES (for example, "Exhibit ES-6").

Acknowledgment

This note would not be complete if we did not acknowledge the excellent support we have enjoyed from the professional staff at OAIR throughout the process of conducting the study and producing the final report.

SECTION 1: PURPOSE

This section contains a brief description of the purposes of this study. OAIR retained Mercer for the primary purpose of conducting an actuarial study that would provide comparative "loss cost"¹ estimates and corresponding "indicated premiums"² for three alternative automobile insurance products for the policy year beginning on July 1, 1992.

The three products under review are:

- the automobile insurance product that was in use prior to the introduction of the Ontario Motorist Protection Plan (OMPP) in 1990. For ease of reference, this product is referenced as the "Pre-OMPP" product throughout this report.
- the product that is currently in use, hereinafter referred to as the "OMPP" product, and
- a new product described in a document recently released by the Minister of Financial Institutions, The Honourable Brian Charlton, titled The Road Ahead. For ease of reference, this product is referenced in this report as the "TRA" product.

Although there are many differences among the three products, for purposes of emphasizing the major aspects that this study measures, we point out a key area in which Pre-OMPP, OMPP, and TRA differ with respect to compensating automobile accident victims:

¹ The term "loss cost" generally refers to amounts that an insurance company pays under a policy, and not to "loss" in the sense of "profit and loss." In this study we use the terms "loss" and "claim" interchangeably. The term "loss" is a term of the craft and is used to mean an occurrence that gives rise to a financial obligation by an insurer for an event that is covered under one of its policies.

² The term "indicated premium" refers to the relative premium among the three products that can be reasonably expected if prevailing expense and profit margins are added to the estimated loss cost.

- The Pre-OMPP product provides limited accident benefits and, beyond accident benefits, is a system based on the idea of establishing fault before recovery can be made.
- OMPP expands accident benefits and limits the right to sue to those injured persons who are not at fault and whose injuries involve serious and permanent injuries which are continuing and physical in nature.
- TRA expands accident benefits in scope and in amount, allows all injured persons who are not at fault to sue for non-economic damages -- subject to an indexed deductible of \$15,000 [\$5,000 for cases brought under the Family Law Act (FLA)] -- and eliminates the right to sue for economic damages.

The three products are described in more detail in Section 3 of this Executive Summary and in full detail in Section 3 of Part II of this report.

The reader should keep in mind that this study serves as input to assist policy makers in their deliberations in considering different automobile insurance product alternatives. The purpose is not the estimation of the rates that insurance companies will file with the OIC under TRA. The rates that individual companies will file with the OIC cannot be known or predicted. Rates among companies under TRA can be expected to vary widely, as they do now. In addition, any changes in rates, upon implementation of TRA, can be expected to vary by company as different insurers are certain to view differently the impact of the proposed changes on their operations.

Accordingly, the terms "loss cost" and "premium" as used in this report should be viewed not as estimates of absolute cost and premium levels, nor as predictions of the rates that companies will file with the OIC, but as estimates of the relative relationship among the three products.

SECTION 2: CONCLUSIONS

This discussion is divided into three segments: a discussion of our conclusions with respect to loss costs, a discussion of indicated premiums, and a brief summation of key secondary conclusions arising in the course of doing our work.

Indicated Loss Costs

Relying on the data sources described in the report and based on the assumptions we have utilized, also described in the report, our analysis of the estimated costs under the Pre-OMPP, OMPP, and TRA products for the policy year beginning on July 1, 1992 yields the following results:

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Income benefits	\$ 21	\$ 63	\$ 100
Medical benefits	23	46	55
Death and funeral benefits	1	4	8
Uninsured motorist coverage	29	10	11
Underinsured motorist coverage	3	2	1
<u>Bodily injury liability coverage</u>	<u>347</u>	<u>115</u>	<u>97</u>
Total of injury coverages	\$ 424	\$ 240	\$ 271
<u>Property coverages (including liability)</u>	<u>350</u>	<u>353</u>	<u>347</u>
<u>All coverages</u>	<u>\$ 775</u>	<u>\$ 593</u>	<u>\$ 619</u>

Note: Numbers do not add precisely due to rounding. All loss costs are weighted to recognize the proportion of the insured population who buy the indicated coverage.

These amounts represent our estimate of the cost per car (to the insurance company) of providing the indicated type of benefit to injured persons and other claimants -- inclusive of all claim settlement expenses, and exclusive of all non-claim settlement expense and profit provisions. For example, the income benefits cost estimate of \$100 (under TRA) consists of two

amounts: the amount of income actually paid to claimants and the amount that the insurance company pays to process the claim (coverage verification, claim investigation, set-up of appropriate paper and computer files, processing payments, etc.). At the same time, the \$100 figure does not include provisions for the following items: sales commissions, premium taxes, general overhead, and profit. The reason estimated loss costs are stated in this manner is that the data on which we rely are captured and reported as a single indivisible unit made up of the claim amount proper and certain of the claim settlement expenses, and our calculations build on these data (this is the customary way in which insurance claim statistics are maintained and used in estimating loss costs).

Indicated Premiums

Once loss costs have been estimated, we include a provision for expenses and profit. The following inset summarizes our results:

<u>Premium component</u>	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Estimated loss costs (from above)	\$ 775	\$ 593	\$ 619
<u>Estimated expenses and profit</u>	<u>289</u>	<u>236</u>	<u>243</u>
<u>Total indicated premium</u>	<u>\$ 1,064</u>	<u>\$ 829</u>	<u>\$ 862</u>

These premiums pertain to a single, typical automobile insured for one year. In other words, these are the indicated premiums for a typical coverage package that a typical automobile owner would pay to buy automobile insurance for his average car from an average priced insurance company. Results for different individuals can be expected to vary a great deal under all three products as they have done in the past and as they do today.

Also, these indicated premiums reflect global assumptions (detailed in Part II and summarized later in this Executive Summary) about expenses, profit margins, etc. In this sense, these premiums indicate the premium that would be needed by the **average insurer** in order to be able to process and pay its expected claims, sales commissions, overhead, and taxes; and still be left

with a reasonable profit if this average insurer made the identical assumptions we have made with respect to claim incidence rates, claim severity, inflation, expense levels, etc. These indicated premiums represent averages, and do not apply to any single insurer. Therefore, one should be extremely cautious in extrapolating from these indicated premiums any conclusions with respect to any individual insurer or any individual insurance buyer, or any conclusions with respect to comparisons to current average "street premiums."

Key Secondary Conclusions

A study of this scope inevitably produces numerous by-products of the broad conclusions noted above, of which several are noteworthy. Those are summarized below to provide some texture for the numerical results:

Access to Tort

- The proportion of injured persons who are not at fault who can effectively sue for non-economic damages under TRA is estimated to be 18.1%.
- The proportion of injured persons who are not at fault who can sue for damages under OMPP is estimated to be 5.8%.

Cost of Benefits

- The total cost of benefits payable under the automobile insurance policy to injured persons under TRA is estimated to be 13% greater than the total cost of benefits payable under OMPP.

- The attribution of the 13% increase in the total cost of benefits payable to injured persons under TRA compared to OMPP is as follows:

-- Accident benefits	+ 45%
-- Bodily injury liability (with UM and UIM)	- 15%

Non-economic Damage Awards/Settlements

- The total cost of awards/settlements for non-economic damages recoverable under TRA is estimated to be 45% of the corresponding costs under Pre-OMPP.
- The total cost of awards/settlements for non-economic damages recoverable under OMPP is estimated to be 31% of the corresponding costs under Pre-OMPP.

Scope of Income Benefits Coverage

- The proportion of injured persons eligible for income benefits under Pre-OMPP is approximately 62%.
- The proportion of injured persons eligible for income benefits under OMPP is approximately 91%.
- The proportion of injured persons eligible for income benefits under TRA is approximately 98%.

The conclusions noted in this section represent averages and will apply differently to different policyholders, insurers, and other related entities -- in accordance with their particular circumstances.

SECTION 3: THE PRODUCTS

This section provides an overview description and comparison of the three products under review. With respect to injury coverages, the three products represent three very different approaches to compensating persons injured in automobile accidents and their dependants.

The Pre-OMPP Product

At its core, the Pre-OMPP product relies first on the concept of negligence (the "fault" concept) in determining who receives how much in compensation for injuries arising out of automobile accidents and second on accident benefits. In other words, injured persons and their dependants need to go through a process of establishing fault in order to be able to effect a recovery beyond the minimum of accident benefits. If agreement cannot be reached between the injured person and the insurer of the party at-fault, the matter is determined by the courts in accordance with principles of common law. Within the context of this study, two important characteristics of the Pre-OMPP product can be observed:

- The accident benefits coverage is quite limited. Although all injured persons have access to accident benefits under the Pre-OMPP product, the benefits are quite limited. For example, the maximum weekly benefit is \$140 and non-wage earners receive virtually no weekly benefits.
- Injured persons who are not at fault can pursue tort action. Injured persons who are not at fault may file an automobile liability insurance claim in an attempt to recover economic damages not covered under the accident benefits coverage and non-economic damages. These claims are normally settled by way of a tort action (or under the threat of a tort action). This is generally a contest to establish fault -- who is to blame for the accident -- with the outcome (amounts of recovery at the end of the process) remaining quite uncertain until the end of the proceeding and depending on the extent of the liability coverage of the party who is at fault.

The OMPP Product

The OMPP product has a very different emphasis with respect to compensating automobile accident victims. There is much greater reliance on the accident benefits coverage and much less reliance on the courts for establishing fault and effecting a recovery. A few observations on each characteristic:

- Accident benefits are increased from Pre-OMPP levels. Accident benefits are expanded in scope and amount for various categories of benefits. For example, maximum weekly income benefits are increased to \$600 per week, many of the ineligible under Pre-OMPP, such as unemployed people over 16, are brought into the system, and care benefits are introduced with a \$3,000 per month maximum. We estimate the cost of the improved accident benefits to be about 147% greater than the Pre-OMPP levels. At the same time a number of significant gaps in benefits remain. For example, weekly income benefits are not indexed, children under 16 years of age receive no benefits, and rehabilitation benefits are subject to a limit.
- Only the most severely injured persons are able to recover damages in tort. A verbal "threshold" is introduced that limits recovery in tort to automobile accident victims who are not at fault who also suffer a permanent, serious injury which is physical in nature. This threshold is estimated to permit 5.8% of injured persons who are not at fault to initiate action in tort. We estimate the cost of the net damages that can be recovered in tort under OMPP by this 5.8% of injured persons to be 33% of the cost of the amounts recoverable under the Pre-OMPP product.

The combined net effect of the cost increase in accident benefits and the reduction in tort recoveries is estimated to amount to an overall reduction of 44% in the "cost of claims"¹ that automobile insurers would incur under OMPP when compared to Pre-OMPP.

The TRA Product

TRA aims in a third direction with respect to these two issues. In general, it enhances the accident benefits substantially, allows more people to sue for non-economic damages, and eliminates recovery for economic damages in tort. More specifically:

- Accident benefits are expanded significantly under TRA. Accident benefits are enhanced under TRA. For example, more people are covered, indexing of benefits is introduced, caps on rehabilitation benefits are lifted, and death benefits are increased. We estimate the increase in the cost of accident benefits that injured persons would receive from their automobile insurance policy under TRA to be 45% greater than under OMPP and 257% greater than under Pre-OMPP.
- Injured persons who are not at fault are allowed to sue for non-economic damages (subject to an indexed deductible) and the right to sue for economic damages is eliminated. Persons who are not at fault can sue for non-economic damages subject to a \$15,000 deductible (\$5,000 for cases filed under FLA). This change is estimated to increase the number of those who can effectively sue for non-economic damages to 18.1% of all injured persons who are not at fault (the corresponding figure under OMPP is 5.8%). Also, the cost of the non-economic damage awards/settlements estimated to be recoverable from automobile insurance under TRA by injured persons who are not at fault, after application of the deductible, represents 45% of the cost of non-economic

¹ The terminology "cost of claims" refers to the sum of two items: the actual amounts of benefits/awards that injured persons actually receive and the expenses incurred by the insurer in claim adjustment expenses (defense costs, processing costs, etc.) It includes "party and party" costs, a partial indemnity for plaintiff's legal expenses, but does not include additional amounts paid by the plaintiff to his or her lawyer.

damages/settlements recoverable under Pre-OMPP (the corresponding figure under OMPP is 31%). The combined effect of the change in access to tort for non-economic damages and the elimination of the right to sue for economic damages is estimated to amount to a 15% reduction in the cost of the awards/settlements that injured persons would receive under TRA from the levels of OMPP.

The combined net effect of the cost of the increase in accident benefits and the reduction in tort recoveries is estimated to amount to an overall increase of 13% in the cost of the benefits that injured persons would receive from automobile insurance under TRA when compared to OMPP.

We conclude this section of the Executive Summary by noting that the property coverages, in the aggregate, remain essentially unchanged moving from one product to the next. The most noteworthy distinguishing feature is that the property damage liability coverage under Pre-OMPP becomes a first party coverage (much like the collision coverage) under both OMPP and TRA. The changes in loss costs associated with this change are not material to the conclusions of this study.

The following discussion further describes and compares the three products.

A. Income Benefits

1. Income Replacement Benefits (IRB)

Pre-OMPP: For those employed and those unemployed who have worked for at least six of the last 12 months: 80% of current gross income or previous income if unemployed; \$140 per week maximum; not indexed; no waiting period.

OMPP: For employed and those unemployed who have worked at least 180 days out of the last 12 months: 80% of current gross income or previous income if unemployed; \$600 per week maximum; \$185

minimum; not indexed; one week waiting period. Benefits continue beyond three years only if insured cannot perform any employment for which he is reasonably suited.

TRA: For employed and those unemployed who have worked for at least 30 days of the last seven months: 90% of current net income or previous income if unemployed (IRB); \$1,000 per week maximum; \$185 per week minimum; indexed benefits available to age 65, then indexed income supplement of 2% of the benefits for each year of income replacement received, to a maximum of 35 years. After two years, benefits are based on assessment of reduced earning capacity.

For income earners over 65: As above, phased down over four years to \$185 per week.

For those unemployed who have worked during the previous three years: \$185 per week for 6 months, then the IRB (based on prior employment); indexed.

2. Income Benefits for non-wage earners

Pre-OMPP: A principal unpaid housekeeper receives \$70 per week for up to 12 weeks.

OMPP: Any insured over age 16 not entitled to Income Replacement Benefits receives \$185 weekly; not indexed.

TRA: Retired insureds and those over age 16 who are not students or employed (as defined in 1. above) receive \$185 weekly; not indexed.

For students: payment for a school year missed of \$2,000 elementary, \$4,000 secondary and \$4,000 for post-secondary semester (maximum of two semesters); \$185 per week after age 16, until age 18; weekly benefits increase to 90% of average weekly earnings at age 30; indexed.

B. Dependant Care Benefits

Pre-OMPP: No benefits payable.

OMPP: For non-wage earners: \$50 per dependant; maximum \$200; not indexed.

TRA: For non-wage earner primary caregivers: \$250 per week for first dependant, \$50 per week for each additional; after six months, non-wage earner caregiver who has temporarily left the workforce receives either income replacement benefit or dependant care benefit.

Expense-incurred dependant care benefits for wage earners (per week): \$75 for one dependant, \$100 for two dependants, \$125 for three dependants, \$150 for four or more dependants; indexed.

C. Medical Benefits

1. Supplementary Medical and Rehabilitation

Pre-OMPP: Lifetime cap of \$25,000.

OMPP: Lifetime cap of \$500,000; 10 year limit.

TRA: No lifetime cap; no time limit.

2. Attendant Care

Pre-OMPP: No benefit provided.

OMPP: Lifetime cap of \$500,000, monthly cap of \$3,000.

TRA: No lifetime cap; monthly cap of \$3,000; indexed.

D. Death Benefits

Pre-OMPP: \$10,000 for spouse plus, in the case of head of household an additional \$1,000 for each surviving dependant beyond the first; \$2,000 for loss of dependant.

OMPP: \$25,000 for spouse or surviving dependant if no spouse; \$10,000 for each surviving dependant or for loss of a dependant.

TRA: \$50,000 - \$200,000 for spouse, or to dependant if there is no spouse; \$10,000 to a surviving dependant or for loss of a dependant; indexed.

E. Funeral Benefits

Pre-OMPP: \$1,000 ceiling.

OMPP: \$3,000 ceiling.

TRA: \$6,000 ceiling; indexed.

F. Quebec Benefits

Pre-OMPP: For accidents in Quebec, Quebec benefits are payable.

OMPP: For accidents in Quebec, insured has option to claim either Ontario or Quebec benefits.

TRA: For accidents in Quebec, insured has option to claim either Ontario or Quebec benefits.

G. Access to Tort

Pre-OMPP: Unrestricted access.

OMPP: For injuries involving death, permanent serious disfigurement, or permanent serious impairment of an important bodily function caused by continuing injury which is physical in nature.

TRA: For non-economic damages, subject to 1) a \$15,000 indexed deductible for other than FLA actions; 2) a \$5,000 indexed deductible for FLA actions for care, companionship and guidance.

The three products are described in greater detail in Part II of this report.

SECTION 4: METHODOLOGY OVERVIEW AND RESULTS

The methodology we utilize to estimate loss costs for the three products under review is a generally accepted actuarial methodology commonly known as the pure premium (or loss cost) method. To these loss costs we add a provision for non-claim expenses and profit to arrive at the final indicated premiums.

The general track we follow in this section consists of brief descriptions and illustrations of each of the following items:

- A. The data we use in developing our estimated loss costs.
- B. The methodology we use to develop baseline costs for each coverage. These are the Pre-OMPP costs, brought forward to the time period under review (policy year beginning on July 1, 1992).
- C. The methodology we use in estimating the effects of increasing accident benefits -- separately for the OMPP and TRA products, along with summary results.
- D. The methodology we use in estimating the loss cost of the bodily injury liability coverage and the effects of changing the criteria for allowing injured persons to sue, separately for the OMPP and TRA products.
- E. The methodology used to include a provision for non-claim expenses and profit.

This section concludes with a recap of the numerical results of the study along with a brief discussion of the issue of sensitivity analysis of these results.

A. Data

The ideal data to carry out this analysis would be two groups of data: data produced under the Pre-OMPP product environment and data produced under the OMPP product environment. One would then make the necessary adjustments to recognize the differences proposed to be made under TRA. Unfortunately this is not possible. The data that are available under OMPP are too sparse and undeveloped to be useful. Some examples to illustrate the point:

- The application of the OMPP threshold concept to actual cases is too immature to be accepted as anything final (i.e., what the threshold actually means, how the threshold ultimately will be viewed by injured persons and their advocates, how the courts will interpret the threshold, etc.).
- There is no assurance that insurance companies are using consistent criteria in opening claim files for OMPP threshold cases or that they are reserving for their OMPP-threshold cases in a consistent manner.
- The experience under the OMPP income benefit is much too undeveloped to be of use, especially in the case of injuries that will require payment of benefits for many years.
- The recession effect on the rates of incidence of claims has a confounding effect on OMPP claim experience.

Therefore, we rely on Pre-OMPP data, the best alternative data source, and make the adjustments necessary to recognize differences brought about by OMPP and TRA. We supplement this information with the best relevant external data we could bring to bear on the subject matter.

We use data aggregates produced by the Insurance Bureau of Canada (IBC) as described in Part II of this report. We also make use of numerous other sources of data such as various Ontario economic data, data produced by Statistics Canada, the database produced for Justice Coulter A. Osborne's Report of Inquiry into Motor Vehicle Accident Compensation in Ontario (Osborne Inquiry), the IBC 1990 Direct Expense Report, interviews with Ontario rehabilitation facilities operators, results of a survey of two independent claim adjusting firms and two law firms, demographic data for Ontario and Quebec, and data obtained from the Société de l'assurance automobile du Québec relevant to Quebec's experience under a pure first party system. Sources of data are disclosed in Parts II and III of the report.

B. Baseline Loss Cost Estimates

The approach that we use to estimate the "baseline loss costs"¹ for each coverage is illustrated on Exhibit ES-2 for income benefits. This exhibit summarizes the logic we use to estimate the Pre-OMPP baseline loss cost for income benefits. These baseline loss costs serve as the springboard for estimating the loss costs of the OMPP and TRA products.

In the following paragraphs we discuss each step in the process, using Exhibit ES-2 as a reference. The ES series of exhibits is largely self-contained and, therefore, in the following discussion we will follow the process only generally and avoid repeating each step of the various exhibits.

¹ The term "baseline loss costs" refers to the relative loss costs that would be applicable up to but excluding the effects of product modifications under OMPP and TRA.

1. Loss Development

This phase of the work estimates the value of the body of claims in the IBC database on an ultimate settlement basis -- that is, at the point when all claims have been settled and closed.

To accomplish this we use the industrywide Ontario loss (including loss adjustment expense - LAE) experience, as reported by the IBC, for the two accident years ended June 30, 1989 and June 30, 1990, valued as of December 31, 1990, and bring this body of experience to an ultimate basis. This process is illustrated in Columns (1) through (6) of Exhibit ES-2. In actuality, we review data back through 1984 (and for some coverages even earlier) for each coverage.

The IBC compiles industrywide loss experience on an accident half-year basis. (A sample page of an IBC data compilation is attached as Exhibit ES-3.) The term "accident half-year" refers to the grouping of losses in accordance with the half-year period in which accidents occur. For example, accident half-year 88-2 includes the costs of all accidents occurring between July 1, 1988 and December 31, 1988, regardless when the claim is actually reported or settled.

We then apply development factors to the losses valued as of December 31, 1990 to estimate the ultimate value of the losses when they are all paid. The loss development factors express the expectation that reported losses for a given accident year generally increase over time as more losses are reported and more information becomes known on losses already reported. A factor of 1.235, for example, indicates that we estimate that the reported losses will increase by a factor of 1.235 (in other words by 23.5%) by the time they are settled and closed. The fact that the reported losses at any point in time (prior to the time that all claims are settled) understate the ultimate values is normal under accident year accounting. Not all claims are reported as of the end of the accident year. Also,

as more facts emerge about the open claims, the value of open claims, in the aggregate, tends to increase. The loss development factors that we use are based on a review of the historical industrywide loss emergence patterns. An example of the analysis that we performed for income benefits is shown in Exhibit ES-4. This exhibit, and the loss development method in general, are explained in detail in Section 5 of Part II (Actuarial Report).

We then add the relevant estimated ultimate losses by accident half-year to calculate the estimated ultimate losses by accident year.

2. Historical Average Loss Costs (Per Car)

Our next step is to divide the estimated ultimate losses by the actual exposure base (number of cars insured) to calculate the historical average loss cost per car. This procedure is shown in Columns (6) through (10) of Exhibit ES-2. The exposure base that is customarily used for automobile insurance is earned car years. (An "earned car year" is the equivalent of one car insured for one year.) After dividing the estimated ultimate losses by the exposures for each accident year to determine the loss cost (average losses per insured car per year), we calculate a weighted average loss cost for the two years, giving more weight to the more recent year.

3. Baseline Loss Cost Estimate

In this, the last leg of the process, we make the final adjustments to the result to make it useful for the time period for which we seek to estimate loss costs per car. To do this we first express the average loss cost on a discounted (present value) basis, i.e., a true economic cost basis, project it forward to the time period on which we are basing this analysis, and adjust it to include a provision for unallocated loss adjustment expenses (ULAE) and the Federal Goods and Services

Tax (GST). This procedure is shown on lines (11) through (19) of Exhibit ES-2.

The discount factor is based on an interest rate of 8.5% and on an assumed loss payment pattern that is based on review of historical industrywide loss payment patterns. (An example of the discounting procedure for income benefits is found in Exhibit ES-5.)

Our determination of the annual trend factor is based on a review of the long-term trends in the historical data and on an adjustment to recognize the impact of the 1990/1991 recession. Based on this analysis, we estimate that a net annual trend factor of 3.5% for income benefits is appropriate. Our calculation of the long-term trends in the rate of incidence of claims (frequency) and the average cost per claim (severity) for income benefits is shown in Exhibits ES-6 and ES-7, respectively. Our calculation of the adjustment that recognizes the effects of the recession is shown in Exhibit ES-8 and is graphically illustrated in Exhibit ES-9, which displays the long-term trend line and the recession adjusted trend line. Our calculation of the trend is explained in detail in Section 5 of Part II (Actuarial Report).

The annual trend factor is applied for a period of 3.8 years, to adjust the historical loss costs to the average loss date expected under the policy period beginning on July 1, 1992. In estimating loss costs for a future period, it is customary to apply a trend factor over a period of several years. This results from three conditions:

- The loss experience upon which the loss cost analysis is based is typically a two or three year period ending about six months before the analysis is conducted (since loss reports are typically produced semi-annually and there is usually a lag of about three months between an evaluation date

and the report production). Thus the "average loss date" in the experience period is usually about two years prior to the time of the analysis.

- For an insurance company making a rate filing, the analysis is typically conducted about three months before the proposed effective date of the filing, to allow time for regulatory review.
- Loss costs must be projected forward to a point one-year beyond the proposed effective date of the rate filing (the average accident date for annual policies issued during the target policy year).

Thus, there is usually a necessity to use a trend period of at least 3.25 years. In this case, because we are relying on historical loss experience prior to the implementation of OMPP, the period of trend is somewhat longer.

The adjustment to include a provision for ULAE, which represent claim department overhead costs, is based on analysis of historical ULAE costs. The adjustment to include a provision for the GST is needed to account for the GST amounts that will be paid to purchase the goods and services (e.g., automobile parts) for which insurance pays.

The resultant baseline loss cost of \$21.26 for income benefits is then used as the basis for estimating the indicated loss costs for the Pre-OMPP, OMPP, and TRA products. Subsequently, it is further adjusted, for each of the products, to reflect product and related environmental differences and to include provisions for non-claim expenses and profit.

Identical logic is used to produce baseline loss costs for all the other coverages provided under the automobile insurance policy. Exhibit ES-10 contains a recap of all the baseline loss costs for all coverages under review.

The next step in the process is to make adjustments to these results that would reflect the three products and related environmental differences. This is discussed in the next two sections.

C. Accident Benefits

The product adjustment for accident benefits is determined separately for each coverage component benefit using the following broad subdivisions:

- Income Benefits
- Medical Benefits
- Death Benefits
- Funeral Benefits
- Quebec Benefits (for accidents occurring in Quebec)

The reader is reminded that the same coverage heading necessarily means different things depending on the context of the product under review. For example: "income benefits" refers to a very different package of benefits under Pre-OMPP than under either OMPP or TRA.

In this Executive Summary we illustrate the process for determining the product-adjusted loss costs for two elements of the accident benefits coverage: income benefits and death benefits. After the derivation of the loss costs of these two elements of the accidents benefits coverage has been described and illustrated, we describe an additional external adjustment that recognizes the general effect of increasing reliance on accident benefits coverage to compensate injured persons.

Because the summary presentation is extremely simplified, numerous adjustments (described in full in Parts II and III of this report) that are necessary to the process are omitted from this discussion. Therefore, we hasten to caution the reader to read the next several paragraphs with a benign eye, since the exposition is far from complete. A glance at Part II will confirm this point.

1. Income Benefits

This benefit includes several components. We illustrate its scope by enumerating some of the benefit components under TRA: injured persons who are employed or temporarily unemployed receive income protection for 90% of net income up to an indexed maximum of \$1,000 per week, injured persons who are non-earners receive benefits of \$185 per week, injured persons who are post-secondary school students receive a benefit of \$4,000 per lost semester of school, etc.

A preliminary step in the process is to calculate an adjusted baseline loss cost to recognize the impact of a few environmental differences (engendered by the introduction of different products) on the baseline loss cost derived in the preceding section. This adjustment reflects the fact that loss cost trend, GST, and ULAE factors are expected to be different in the OMPP and TRA environments than in the Pre-OMPP environment. The loss cost trend is expected to be lower under OMPP and TRA because of coverage differences, and further reduced under TRA because of expected increased attention to road safety programs. The GST and ULAE factors are expected to be slightly different under OMPP and TRA due to shifts in coverage composition. This adjustment produces the following adjusted loss costs:

Pre-OMPP baseline loss cost	\$21.26 (base)
OMPP adjusted baseline loss cost	\$20.64
TRA adjusted baseline loss cost	\$19.89

The general methodology we follow to build on these adjusted baseline loss costs to recognize product differences is to calculate the aggregate benefits that would be payable under each of the three products, use these aggregates to arrive at "relativities" that express the costs of the three products relative to Pre-OMPP, then apply these relativities to the appropriate adjusted baseline loss costs derived earlier.

In order to accomplish the first step, we:

- a. segment the Ontario population by benefit category under Pre-OMPP, OMPP, and TRA. For example, 5.9% of the population is classified as attending secondary school. See Exhibit ES-11,
- b. estimate the accident frequency by category. For example, we estimate that retired persons have an accident frequency that is 40% of the wage earner accident frequency. See Exhibit ES-12,
- c. convert accident frequencies to claim frequencies. For example, the wage earner claim frequency for income benefits under OMPP and TRA is estimated to be 10% higher than under Pre-OMPP (the expansion of benefits will cause a 10% increase in the number of claims arising from the same accidents). See Exhibit ES-13,
- d. estimate the present value of the composite average benefit for each group for each of the three products under review (including reflection of indexing to recognize the effects of inflation on benefit levels under TRA). See Exhibit ES-14, and

- e. aggregate those benefits to arrive at the total average income benefit payable. See Exhibit ES-15.

The remaining two steps are recapped below:

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
(1) Baseline loss cost	\$21.26	\$21.26	\$21.26
(2) Adjusted baseline loss cost	\$21.26	\$20.64	\$19.89
(3) Estimated income benefit	\$1,394	\$4,754	\$7,924
(4) Relativity to Pre-OMPP	1.000	3.410	5.685
(5) Estimated loss cost (2)x(4)	\$21.26	\$70.39	\$113.07

We note that the estimated loss costs displayed in row (5) are prior to the application of the supplemental external adjustment, and hence do not represent the final loss cost estimates.

One of the natural by-products of our analysis is the ability to compare our results to the estimated costs if TRA were primary coverage relative to private income replacement plans. The estimated cost of TRA benefits, if those benefits are primary, is approximately \$168. This is an increase of approximately 49% over the estimated cost of TRA as secondary coverage. The derivation of this estimate is presented in Appendix 6, Exhibit 13.

2. Death Benefit

The death benefit applies when a person, who dies as a result of an automobile accident, has a spouse and/or dependants, or is a dependant of another person. For example, in the case of a person with a net weekly wage of \$500, who is killed in an automobile accident and who is survived by a spouse and no other dependants, a benefit of \$93,600 will be paid to the spouse of the deceased.

Again, as for income benefits, the adjusted baseline loss costs are first calculated to recognize the environmental differences engendered by the three different products.

Once the adjusted baseline loss costs are established, estimated average benefits payable are derived separately for each category of beneficiary under each of the three products under review, and then the aggregates of these estimates are used to derive product relativities (to the base Pre-OMPP level). The relativities are then applied to the adjusted baseline loss costs derived earlier. In carrying out this process we also estimate the demographic composition of the recipients of death benefits of persons killed in automobile accidents.

The resultant loss costs for these two components and the remaining components of the accident benefits coverage are displayed in Exhibit ES-16.

3. Supplemental External Adjustment

All of the accident benefit cost estimates discussed thus far are principally derived from Ontario-based data under a predominantly tort environment (the Pre-OMPP era). We believe that it is important to the integrity of the overall process to introduce some element of recognition of the experience obtained from a predominantly first party environment, such as Quebec. Therefore, we create two parallel examples to arrive at a relativity of cost estimates derived in a tort environment and cost estimates derived in a first party environment.

First we construct an estimate of the cost of the Quebec benefit system using Ontario claim and demographic data. Then we take Quebec's actual claim experience and modify it to recognize Ontario accident rates, economic differences, and demographic differences. We then compare the two outcomes and this comparison yields a differential that quantifies the estimate of the effect

of using data from a predominantly tort environment and data from a predominantly first party environment. This differential also includes the inherent differences between public and private delivery systems. This relativity is incorporated in the final estimates. Exhibit ES-17 shows the Ontario-based cost estimates, the Quebec-based experience differential, and the final estimates that incorporate the Quebec differential -- along with the mechanics used to determine the weight that would be given to this external adjustment.

D. Bodily Injury Liability Coverage

Once again, we implement a preliminary step -- development of the adjusted baseline loss costs to recognize the environmental differences under the three products.

In estimating the cost of the bodily injury liability coverage we make use of the following data sources for the OMPP and TRA products: IBC experience gathered for the Pre-OMPP product, and the database of nearly 1,400 closed bodily injury liability claims constructed for use in the Osborne Inquiry. In this section we briefly discuss the different methodologies used in arriving at the OMPP and TRA costs.

First, we include a brief note on why two different methodologies are needed in costing this coverage. The OMPP and TRA concepts of settling claims in tort are radically different. Under OMPP only certain persons can sue (the most severely injured persons who are not at fault) and therefore the body of relevant (OMPP) claims first has to be drawn out of the population of Pre-OMPP claims, and then costs are calculated. As pointed out earlier in this Executive Summary, a problem arises as to which claims to draw out of the population. We need to find a way to deal with this problem effectively. Resolving this problem leads the methodology in one direction.

Under TRA, on the other hand, we examine all claims in the population of Pre-OMPP claims, and the amount of the award/settlement for non-economic benefits for each claim is subjected to the relevant deductible and the final costs are then calculated directly. There is no question as to whether any one claim is or is not considered. This, of course, is a very different methodology from OMPP.

1. OMPP Threshold

In selecting our methodology for assessing the impact of the OMPP threshold we were faced with a number of constraints: absence of relevant meaningful experience under OMPP that could assist us in sorting out which claims in the Osborne Inquiry database would pass the OMPP threshold; during the development process of the OMPP product there was a wide range of views on just how the OMPP threshold would work out; also during the OMPP development process there was an equally wide range of views on the effect of the OMPP threshold; and, in general, these observations relied mostly on the judgment of those making the statements and/or calculations. Accordingly, we sought to find a way to minimize the uncertainty of estimating the effect of the OMPP threshold on the cost of the bodily injury liability coverage. We concluded that an effective way is to have each claim in the Osborne Inquiry database evaluated by a number of experienced claim professionals. We sought the assistance of four Ontario-based firms: two independent claim adjusting firms and two law firms (one defense and one plaintiff).

Each claim in the Osborne Inquiry database was first updated to reflect increases in claim costs since the time of the Osborne Inquiry database to the period under review (policy year beginning on July 1, 1992). These updated values along with additional relevant details about the nature of the injuries for each claimant in the database were submitted to each of the four survey participants. Each survey participant made an independent determination as to whether or not each claim

would meet the OMPP threshold. The returns were consolidated to produce the following composite results:

- Proportion of claimants who pass the OMPP threshold 5.8%
- Proportion of cost of damages awarded to those whose injuries pass the OMPP threshold, net of offsets 32.1%

Applying the latter ratio to the adjusted baseline loss cost derived earlier (and subject to a number of other adjustments) yields the projected OMPP loss cost for the bodily injury liability coverage.

2. TRA Deductible

As indicated earlier, the costing of the bodily injury liability coverage under TRA follows a different path altogether. Mainly, we need to estimate the effects of the TRA deductibles. First, each claim in the Osborne Inquiry database is trended forward to bring it to the cost level expected to prevail during the target policy period, the policy year beginning on July 1, 1992. Second, the amount of each award/settlement is segregated into its damage components (economic, non-economic, party and party costs, prejudgment interest, etc.). Third, the appropriate components (after being subjected to some other necessary adjustments) were combined and tested against the proposed \$15,000 (\$5,000 for FLA cases) indexed deductible. Finally, all the claims that are above the applicable deductible(s) were counted and their claim amounts added, to produce the final results:

- The proportion of claimants whose non-economic awards/settlements are above the applicable deductibles 18.1%

- The total cost of all non-economic awards/settlements that are in excess of the applicable deductible as a proportion of the total cost of all awards/settlements 28.4%
- The total cost of all non-economic awards/settlements that are in excess of the applicable deductible as a proportion of the total cost of all non-economic awards/settlements 45.2%

The ratio of surviving non-economic losses is then applied to the adjusted TRA baseline estimated loss cost, along with a number of other adjustments, to produce the final bodily injury liability coverage estimated loss cost under TRA.

The final bodily injury liability coverage estimated loss costs for the three products are:

Pre-OMPP	\$347
OMPP	115
TRA	97

The loss costs for the uninsured and underinsured motorist coverages are derived in a similar manner to the bodily injury liability coverage.

The bodily injury liability coverage loss costs and the accident benefits coverage loss costs, along with loss costs for all the other coverages, are compiled and presented in Exhibit ES-1.

E. Expenses and Profit

Given the estimated loss costs for each product, the remaining step is to introduce provisions for non-claim expenses and profit. Each is discussed separately.

1. Expenses

Although a detailed study of non-claim expenses is outside the scope of this assignment, we make reasonable expense assumptions that are suitable for purposes of this study. They are based on, and differ little from, recent actual experience in Ontario. We base our analysis on IBC Direct Expense Reports for 1989 and 1990 as well as on an expense study that was conducted for the Ontario Automobile Insurance Board (OAIB). We project the data from both sources to the levels that would apply to the target policy period, the policy year beginning July 1, 1992. The provisions are as follows:

Expense constant	\$51 per car
Sales commissions	10.2% of premium
Other acquisition costs	3.1% of premium
Premium taxes	3.0% of premium

2. Profit

Even though the determination of an appropriate profit margin for the automobile insurance industry is beyond the scope of this assignment, we make assumptions for purposes of this study with respect to the profit component itself. The key assumptions are listed below along with a brief discussion of each:

a. Target Rate of Return

The after-tax target rate selected for purposes of this study is 11.5% of invested equity. This selection is reasonable in light of a review of the profitability results of the financial services industry during the past eight

years. The full range of data that was reviewed is included in Part III. For this Executive Summary we present a small extract:

	8 Yrs.	5 Yrs.	1 Year
	Ending	Ending	Ending
<u>Industry Category</u>	<u>1990</u>	<u>1990</u>	<u>1990</u>
Fin. Svcs. Ind. - Total	11.8%	10.6%	11.4%
Fin. Svcs. Ind. - Ex Ins.	12.1	10.7	11.6
Insurance (Life + P&C)	10.0	10.3	10.4

The selected target of 11.5% is clearly in the range of observed relevant experience and we believe this is a reasonable profit target for purposes of this study of comparative costs.

b. Leverage ratios

The leverage ratio is the ratio of written premiums to invested equity (or surplus). It is necessary to make an assumption about leverage ratios for the purpose of calculating a provision for profit in insurance premiums.

Two observations about leverage ratios:

- In general, a higher leverage ratio, all other things remaining equal, generates a lower profit provision and hence a lower premium requirement, and conversely.
- For any two insurers, the insurer with the lower leverage ratio, all other things remaining equal, is the one that is exposed to a lower risk of insolvency.

The selected leverage ratio is 2.25, for all coverages combined. This selection is based on an analysis of the Ontario insurers' leverage ratios in 1989 and 1990. The full range of data that was reviewed is included in Part III. For this Executive Summary we show a small extract:

<u>Median Leverage Ratio</u>	<u>1989</u>	<u>1990</u>
Largest 25 insurers	2.25	2.22
Next largest 24 insurers	2.00	2.28

The selected leverage ratio of 2.25 is very comfortably in the range of observed ratios of property and casualty insurers doing business in Ontario and is a reasonable target for purposes of this comparative study.

c. Pre-tax investment yield

This assumption is needed to estimate the amount of investment income that an insurer can expect from investing premiums held while awaiting the payment of claims and expenses. In general, the higher the assumed yield, the lower the premium, and conversely. The selected rate of 8.5% is composed of two parts: a base inflation rate of 4.5% and a real return rate of 4%. These assumptions are considered reasonable based on a review of historical inflation rates and insurance industry investment experience.

d. Income tax rate

For purposes of this report we use a composite (Federal and Provincial) income tax rate of 45%. The derivation of this tax rate is provided in Part III.

Other assumptions discussed in the report include: lag in premium collections (the time period spanning the point when a broker receives a premium remittance from a policyholder and the time the premium payment is remitted to the insurance company), policy term, when broker commissions are paid, how long surplus is held, and when expenses are paid.

Given these expense and profit provisions, the full derivation of the indicated premiums under the three products is now possible and those results are shown in Exhibit ES-18.

F. Final Compilation

The projected indicated premiums for Pre-OMPP, OMPP, and TRA are provided in Exhibit ES-19.

These premiums pertain to a single, typical automobile insured for one year. In other words, these are the indicated premiums for a typical coverage package that a typical automobile owner would pay to buy automobile insurance for his average car from an average priced insurance company. Results for different individuals can be expected to vary a great deal under all three products as they have done in the past and as they do today.

Also, these indicated premiums reflect global assumptions (detailed in Part II and summarized later in this Executive Summary) about expenses, profit margins, etc. In this sense, these premiums indicate the premium that would be needed by the **average insurer** in order to be able to process and pay its expected claims, sales commissions, overhead, and taxes; and still be left with a reasonable profit if this average insurer made the identical assumptions we have made with respect to claim incidence rates, claim severity, inflation, expense levels, etc. These indicated premiums represent averages, and do not apply to any single insurer. Therefore, one should be extremely cautious in

extrapolating from these indicated premiums any conclusions with respect to any individual insurer or any individual insurance buyer, or any conclusions with respect to comparisons to current average "street premiums."

G. Sensitivity Analysis

This Executive Summary presents our best estimate of the indicated premiums for the three products under review. However, as must be clear to the reader by this point, literally hundreds of assumptions are made in the estimation process. Throughout the balance of this report we provide extensive sensitivity testing of many of our sub-conclusions. In other words, we ask and answer the question: "What would the result(s) be if we use alternative assumptions?" For example, we test the impact of using alternative investment yields, we test the impact of using alternative target rates of return, we test the impact of using alternative leverage factors, and we test the impact of using alternative assumptions with respect to the proportion of injured persons who require "long-term" attendant care.



SECTION 5: SCOPE, CAVEATS, AND LIMITATIONS

In this section we describe the specifications to which this study is constructed and some of the caveats and limitations that the reader should keep in mind. These aspects cover a wide range of issues -- from basic data reliance and quality issues to issues involving the target rate of return we have used and everything in between. The complete description of the scope, caveats, and limitations is provided in Section 6 of Part II, and is incorporated in this Executive Summary by reference.

In this section we identify the key elements of the scope, caveats, and limitations that need to be kept in mind (1) while reviewing this Executive Summary and (2) in connection with any attempt to extrapolate from the conclusions of this study.

A. Best Estimate

All cautionary remarks notwithstanding, the conclusions presented in this report represent our best estimate of the relative actuarial costs of the three products for the policy year beginning on July 1, 1992: Pre-OMPP, OMPP, and TRA.

B. Unanticipated Changes

Unanticipated changes in factors such as judicial decisions, legislative actions, claim consciousness, claim management, claim settlement practices, and economic and social conditions may significantly alter the conclusions.

C. Effective Date of OMPP

OMPP was introduced on June 22, 1990. Because the data aggregates are provided to us on a half-yearly basis, we make the simplifying assumption that OMPP was introduced on July 1, 1990. This introduces a minuscule, but nevertheless real, distortion in our estimates. To help minimize the relative effects of this assumption, we make the same assumption in estimating the effects of TRA.

D. Limitation of Relevant Data

Because there is no directly relevant experience on which to rely for the purpose of costing OMPP and TRA, we rely on alternate data sources and make the necessary adjustments to simulate the effects of OMPP and TRA.

E. Countervailing Forces

Our projections estimate the effects of fundamental system-wide changes. It should be understood that other forces, which are not incorporated in our work, may arise which can affect our estimate of the effects of changes contemplated by OMPP and TRA.

F. Contingency Margin

Our conclusions do not include any margin for unanticipated contingencies.

G. Vehicle Type

This study focuses on the estimation of private passenger automobile insurance loss costs under three specific automobile insurance products. The vehicle types covered by this study are private passenger non-fleet automobiles, excluding those classified as farm use. In other words, this study excludes consideration of other vehicle types such as: motorcycles, taxis, recreational vehicles, delivery vans. Accordingly, we have not reflected the effect of transfer payments that might occur between insurers of vehicles covered by this study and other types of vehicles.

H. Coverages

This study deals with all coverages except optional accident benefits, specified perils coverage, and the all perils coverage. These coverages constitute a negligible portion of the total premium volume in Ontario.

I. Period of Coverage, Policy Term, and Payment Plans

The subject policy period is the policy year beginning on July 1, 1992. All policies of insurance are assumed to be written with annual terms. This is a simplifying assumption and has no material impact on our conclusions. We also assume that all premiums are paid in a single payment and, therefore, the need to collect higher premiums for those choosing multiple payment plans is not reflected in our work. This is also a simplifying assumption and has no material impact on our conclusions.

J. Provisions for Expenses and Profit

Although we make what we believe to be reasonable assumptions about the expense and profit provisions, this study does not purport to make any statements about what is an appropriate expense provision or about what is an appropriate target rate of return for automobile insurance. What we use is based on observation of industry experience over a number of years. We believe all of our assumptions to be reasonable in light of historical experience. Furthermore, the sensitivity analysis we conduct throughout the study helps in indicating the significance of choosing alternative assumptions to those we make based on our observation of historical experience.

K. Data Limitations

We rely on industry data aggregates without conducting an independent audit of the data. To the extent the data may contain errors of submission or compilation, the effects of such errors may affect the conclusions of this study.

L. Aggregates and Averages

This study is concerned with the relative cost of coverage for the entire Ontario private passenger automobile insurance market on two levels: in the aggregate and for the average car. Therefore, whatever results we reach are not suitable for use as a benchmark against which to evaluate any one company's rates or any individual policyholder's premium.

SECTION 6: SUPPORTING EXHIBITS

The following pages contain the exhibit series beginning with the identification E(executive) S(summary) -- the ES series. They are intended to accompany and support the text of this Executive Summary.

Executive Summary
Estimated Discounted Loss Costs for
Policy Period Beginning July 1, 1992

Exhibit ES-1

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
(1) Bodily Injury Liability	\$347.48	\$114.86	\$97.29
(2) Accident Benefits			
Income	\$21.26	\$62.61	\$99.60
Medical	23.00	45.81	54.83
Death	0.92	3.66	7.46
Funeral	0.17	0.50	0.97
Quebec	0.26	0.15	0.08
<u>Total Accident Benefits</u>	<u>\$45.61</u>	<u>\$112.73</u>	<u>\$162.94</u>
(3) Uninsured Motorist	\$28.66	\$10.31	\$10.67
(4) <u>Underinsured Motorist</u>	<u>\$3.00</u>	<u>\$1.82</u>	<u>\$0.57</u>
(5) Sub-total Injury Coverages	\$424.39	\$239.50	\$271.40
(6) Property Damage *	\$117.33	\$118.32	\$115.75
(7) Collision	\$188.05	\$189.64	\$185.54
(8) <u>Comprehensive</u>	<u>\$86.94</u>	<u>\$87.68</u>	<u>\$87.68</u>
(9) <u>Sub-total Property Coverages</u>	<u>\$350.36</u>	<u>\$353.33</u>	<u>\$347.48</u>
(10) <u>Total Estimated Loss Costs</u>	<u>\$774.75</u>	<u>\$592.83</u>	<u>\$618.88</u>

Notes:

The following exposure weights were applied in deriving the sub-totals and totals displayed above:

Bodily Injury Liability:	100%	Property Damage:	100%
Accident Benefits:	100%	Collision:	80%
Uninsured Motorist:	100%	Comprehensive:	95%
Underinsured Motorist	88%		

- * The property damage coverage means different things under each product: under Pre-OMPP, it is a pure liability coverage; under OMPP and TRA it becomes a predominantly first party coverage with a small remaining element of liability.

Executive Summary
Estimation of Baseline Loss Cost
For Income Benefits

Exhibit ES-2

	Accident Half Year	Reported Losses at 12/31/90	Loss Development Factor	Estimated Ultimate Losses (2) x (3)	
	(1)	(2)	(3)	(4)	
	88-2	\$42,824,100	1.059	\$45,350,722	
	89-1	36,932,681	1.097	40,515,151	
	89-2	44,264,613	1.157	51,214,157	
	90-1	38,004,496	1.235	46,935,553	

Accident Year Ended 6/30	Estimated Ultimate Losses	Earned Car Years	Estimated Loss Costs (6) / (7)	Weights	Weighted Average Loss Cost (10)
(5)	(6)	(7)	(8)	(9)	(10)
1989	\$85,865,873	4,458,843	\$19.26	0.30	
1990	98,149,710	4,580,194	21.43	0.70	\$20.78

(11) Weighted Average Loss Cost (10)	\$20.78
(12) Discount Factor	0.829
(13) Discounted Average Loss Cost (11) x (12)	\$17.23
(14) Annual Trend Factor	1.035
(15) Years to Trend (to 7/1/93)	3.8
(16) Trended Discounted Loss Cost (13) x 1.035 for 3.8 years	\$19.63
(17) ULAE Factor	1.067
(18) GST Factor	1.015
(19) Baseline Loss Cost (16) x (17) x (18)	\$21.26

Note: Each step in the calculation is discussed in the Executive Summary.

Executive Summary
IBC Data For Income Benefits

Exhibit ES-3

PRIVATE PASSENGER AUTOMOBILE EXCLUDING FARMERS - ACCIDENT BENEFITS
PROVINCE OF ONTARIO
DISABILITY
CLAIMS, AND CLAIMS ALLOCATED EXPENSES
OBSERVED AFTER :

ACC. YEAR	006 MONTHS		012 MONTHS		018 MONTHS		024 MONTHS	
	\$	\$	\$	\$	\$	\$	\$	\$
1983-1	7,978	10,448,430	7,425	12,177,944	7,081	13,470,949	6,915	14,480,617
1983-2	9,883	14,835,348	9,417	17,009,509	8,899	19,324,710	8,090	20,399,794
1984-1	9,540	12,754,923	9,957	15,814,597	9,494	18,889,531	8,205	17,483,746
1984-2	12,102	17,918,473	11,322	21,481,179	10,588	22,121,770	10,267	23,173,508
1985-1	11,286	19,121,932	11,104	18,710,856	10,357	20,588,475	9,974	21,700,244
1985-2	14,078	19,155,944	12,904	23,237,992	12,106	25,300,375	11,988	26,114,165
1986-1	11,272	19,014,677	10,315	18,989,234	9,895	20,805,313	9,597	22,421,530
1986-2	13,467	21,306,636	12,163	26,274,810	11,286	29,418,808	11,063	31,281,675
1987-1	13,253	21,902,786	12,117	26,336,252	11,270	28,389,682	10,674	30,447,634
1987-2	16,543	28,827,659	14,848	33,483,637	13,863	36,100,893	13,500	37,898,952
1988-1	15,267	28,281,949	14,381	31,294,396	13,110	33,004,579	12,675	34,937,048
1988-2	18,896	34,917,488	18,466	39,883,338	15,125	42,107,243	14,767	44,023,433
1989-1	18,388	38,722,650	14,968	33,770,614	14,010	37,133,733	13,600	38,932,681
1989-2	19,142	37,204,022	17,876	43,888,253	16,680	44,284,613		
1990-1	19,215	28,093,786	14,356	28,004,496				
1990-2	14,016	75,738,008						

ACC. YEAR	030 MONTHS		036 MONTHS		042 MONTHS		048 MONTHS	
	\$	\$	\$	\$	\$	\$	\$	\$
1983-1	6,842	15,479,901	6,785	15,872,021	6,717	15,896,213	6,698	16,193,243
1983-2	8,489	20,895,352	8,390	21,701,822	8,349	22,188,786	8,336	23,043,541
1984-1	8,089	18,167,901	7,950	19,227,383	7,954	20,035,131	7,929	20,193,288
1984-2	10,074	24,945,467	10,003	28,516,053	9,913	27,789,228	9,871	28,010,974
1985-1	9,900	23,607,472	9,809	24,710,799	9,723	25,086,019	9,671	26,372,564
1985-2	11,750	28,895,489	11,662	29,636,767	11,588	30,119,760	11,514	30,717,973
1986-1	9,488	32,578,194	9,357	24,153,682	9,284	24,819,104	9,199	26,344,992
1986-2	10,818	32,249,525	10,658	32,912,053	10,525	33,128,870	10,476	34,252,121
1987-1	10,678	30,983,678	10,494	32,012,789	10,440	32,699,640	10,342	32,125,492
1987-2	13,180	40,724,402	13,026	41,383,284	12,897	40,375,948		
1988-1	12,448	38,397,397	12,251	35,131,108				
1988-2	14,478	42,824,100						
1989-1								
1989-2								
1990-1								
1990-2								

ACC. YEAR	054 MONTHS		060 MONTHS		066 MONTHS		072 MONTHS	
	\$	\$	\$	\$	\$	\$	\$	\$
1983-1	6,677	16,889,817	6,684	16,852,832	6,651	17,034,221	6,634	16,917,201
1983-2	8,300	23,279,923	8,278	23,298,603	8,246	23,307,850	8,230	22,981,553
1984-1	7,898	20,309,609	7,881	20,458,655	7,889	20,849,847	7,885	21,537,006
1984-2	9,821	27,395,819	9,793	27,854,888	9,770	28,438,198	9,772	28,371,288
1985-1	9,638	26,669,374	9,597	26,978,114	9,590	27,046,805	9,588	26,974,461
1985-2	11,485	31,015,222	11,435	31,114,498	11,410	31,328,017		
1986-1	9,171	26,640,990	9,133	26,784,814				
1986-2	10,419	32,781,782						
1987-1								
1987-2								
1988-1								
1988-2								
1989-1								
1989-2								
1990-1								
1990-2								

ACC. YEAR	078 MONTHS		084 MONTHS		090 MONTHS		096 MONTHS	
	\$	\$	\$	\$	\$	\$	\$	\$
1983-1	6,621	16,275,910	6,605	16,437,312	6,609	16,490,939	6,605	16,169,222
1983-2	8,227	23,187,623	8,221	23,109,754	8,222	23,090,063		
1984-1	7,889	20,110,662	7,889	19,378,949				
1984-2	9,788	26,237,626						
1985-1								
1985-2								
1986-1								
1986-2								
1987-1								
1987-2								
1988-1								
1988-2								
1989-1								
1989-2								
1990-1								
1990-2								

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7

Executive Summary
Loss Development
Income Benefits (\$000's)

Accident Half Year	Cumulative Development at Indicated Age (in months)															Age-to-Age Link Ratios
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	
83-1	12178	13471	14481	15480	15872	15896	16193	16890	16853	17034	16517	16276	16437	16451	16169	
83-2	17010	19325	20400	20895	21702	22169	23044	23280	23299	23308	22982	23188	23106	23090		
84-1	15615	16890	17484	18168	19227	20035	20193	20310	20459	20850	21537	20111	19379			
84-2	21451	22122	23174	24545	26516	27769	28011	27396	27655	28436	28371	28238				
85-1	18711	20588	21700	23607	24711	25085	26373	26669	26978	27047	26574					
85-2	23238	25300	28114	28895	29837	30120	30718	31015	31114	31326						
86-1	18569	20805	22422	23578	24154	24619	26345	26641	26785							
86-2	26275	29419	31282	32250	32912	33129	34252	32782								
87-1	26336	28370	30448	30984	32013	32696	32135									
87-2	33484	36101	37899	40724	41383	40376										
88-1	31294	33005	34937	36397	35131											
88-2	39883	42107	44023	42824												
89-1	33771	37134	36933													
89-2	43868	44265														
90-1	38004															

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.106	1.075	1.069	1.025	1.002	1.019	1.043	0.998	1.011	0.970	0.985	1.010	1.001	0.983
83-2	1.136	1.056	1.024	1.039	1.022	1.039	1.010	1.001	1.000	0.986	1.009	0.996	0.999	
84-1	1.082	1.035	1.039	1.058	1.042	1.008	1.006	1.007	1.019	1.033	0.934	0.964		
84-2	1.031	1.048	1.059	1.080	1.047	1.009	0.978	1.009	1.028	0.998	0.995			
85-1	1.100	1.054	1.088	1.047	1.015	1.051	1.011	1.012	1.003	0.983				
85-2	1.089	1.111	1.028	1.033	1.009	1.020	1.010	1.003	1.007					
86-1	1.120	1.078	1.052	1.024	1.019	1.070	1.011	1.005						
86-2	1.120	1.063	1.031	1.021	1.007	1.034	0.957							
87-1	1.077	1.073	1.018	1.033	1.021	0.983								
87-2	1.078	1.050	1.075	1.016	0.976									
88-1	1.055	1.059	1.042	0.965										
88-2	1.056	1.046	0.973											
89-1	1.100	0.995												
89-2	1.009													

Average Link Ratios:

Latest 6 Ex. H/L	1.067	1.055	1.036	1.024	1.013	1.029	1.001	1.006	1.010	0.989	0.990	0.996	1.000	0.983
All Periods	1.083	1.057	1.042	1.031	1.016	1.026	1.003	1.005	1.011	0.994	0.981	0.990	1.000	0.983
Selected	1.067	1.055	1.036	1.024	1.013	1.029	1.001	1.006	1.010	0.989	0.990	0.996	1.000	0.983

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.212	1.136	1.077	1.040	1.016	1.003	0.975	0.974	0.968	0.958	0.969	0.979	0.983	0.983
All Periods	1.240	1.145	1.083	1.039	1.008	0.992	0.967	0.964	0.959	0.949	0.955	0.973	0.983	0.983
Selected	1.235	1.157	1.097	1.059	1.034	1.021	0.992	0.991	0.985	0.975	0.986	0.996	1.000	1.000

William M. Mercer Limited

Executive Summary
Calculation of Discount Factor
Income Benefits

Exhibit ES-5

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	28.8%	0.5	0.960	27.7%
2	31.4%	1.5	0.885	27.8%
3	11.9%	2.5	0.816	9.7%
4	6.4%	3.5	0.752	4.8%
5	5.7%	4.5	0.693	3.9%
6	4.4%	5.5	0.638	2.8%
7	4.3%	6.5	0.588	2.5%
8	3.5%	7.5	0.542	1.9%
9	1.8%	8.5	0.500	0.9%
10	0.9%	9.5	0.461	0.4%
11	0.5%	10.5	0.425	0.2%
12	0.2%	11.5	0.391	0.1%
13	0.1%	12.5	0.361	0.0%
14	0.1%	13.5	0.332	0.0%
15	0.0%	14.5	0.306	0.0%
TOTAL	100.0%	--	--	82.9%

Average Discount Factor = 0.829

Notes:

- (2) From Appendix 2, Exhibit 1, Page 2.
- (3) Assumes payments made evenly throughout the year.
- (4) $1/[1.085]^n$ Column (3).
- (5) Column (2) x Column (4).

Executive Summary
Claim Frequency Trend Calculation
Income Benefits

12 Month Basis					Ultimate Basis						
Accident Year	Exposure (2)	Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1984	3,656,935	18,957	0.5184	—		16,091	0.999	16,075	0.4396	—	
1985	3,872,518	22,608	0.5838	12.6%	10%	19,351	0.999	19,332	0.4992	13.6%	10%
1986	3,928,916	24,176	0.6153	5.4%	15%	20,543	0.997	20,481	0.5213	4.4%	15%
1987	4,061,519	25,416	0.6258	1.7%	20%	20,761	0.991	20,574	0.5066	-2.8%	20%
1988	4,259,750	30,115	0.7070	13.0%	25%	25,108	0.979	24,581	0.5771	13.9%	25%
1989	4,458,843	32,852	0.7368	4.2%	30%	28,078	0.952	26,730	0.5995	3.9%	30%
1990	4,580,194	33,091	0.7225	-1.9%		31,016	0.886	27,480	0.6000	0.1%	
5 Year Weighted Change:					3.9%					3.8%	
Latest 7 Year Fitted Change:					5.9%					5.1%	
Latest 5 Year Fitted Change:					5.0%					4.6%	
Selected Change:										3.8%	

Executive Summary
Claim Severity Trend Calculation
Income Benefits

Exhibit ES-7

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1984	\$29,764	18,957	\$1,570	—		\$42,469	16,075	\$2,642	—	
1985	36,573	22,608	1,618	3.1%		54,319	19,332	2,810	6.4%	
1986	38,253	24,176	1,582	-2.2%	10%	56,949	20,481	2,781	-1.0%	10%
1987	48,178	25,416	1,896	19.8%	15%	64,333	20,574	3,127	12.4%	15%
1988	59,766	30,115	1,985	4.7%	20%	77,546	24,581	3,155	0.9%	20%
1989	68,606	32,852	2,088	5.2%	25%	85,898	26,730	3,214	1.9%	25%
1990	69,963	33,091	2,114	1.2%	30%	98,147	27,480	3,572	11.1%	30%
5 Year Weighted Change:				5.4%					5.7%	
Latest 7 Year Fitted Change:				6.0%					4.8%	
Latest 5 Year Fitted Change:				7.0%					5.4%	
Selected Change:									5.7%	

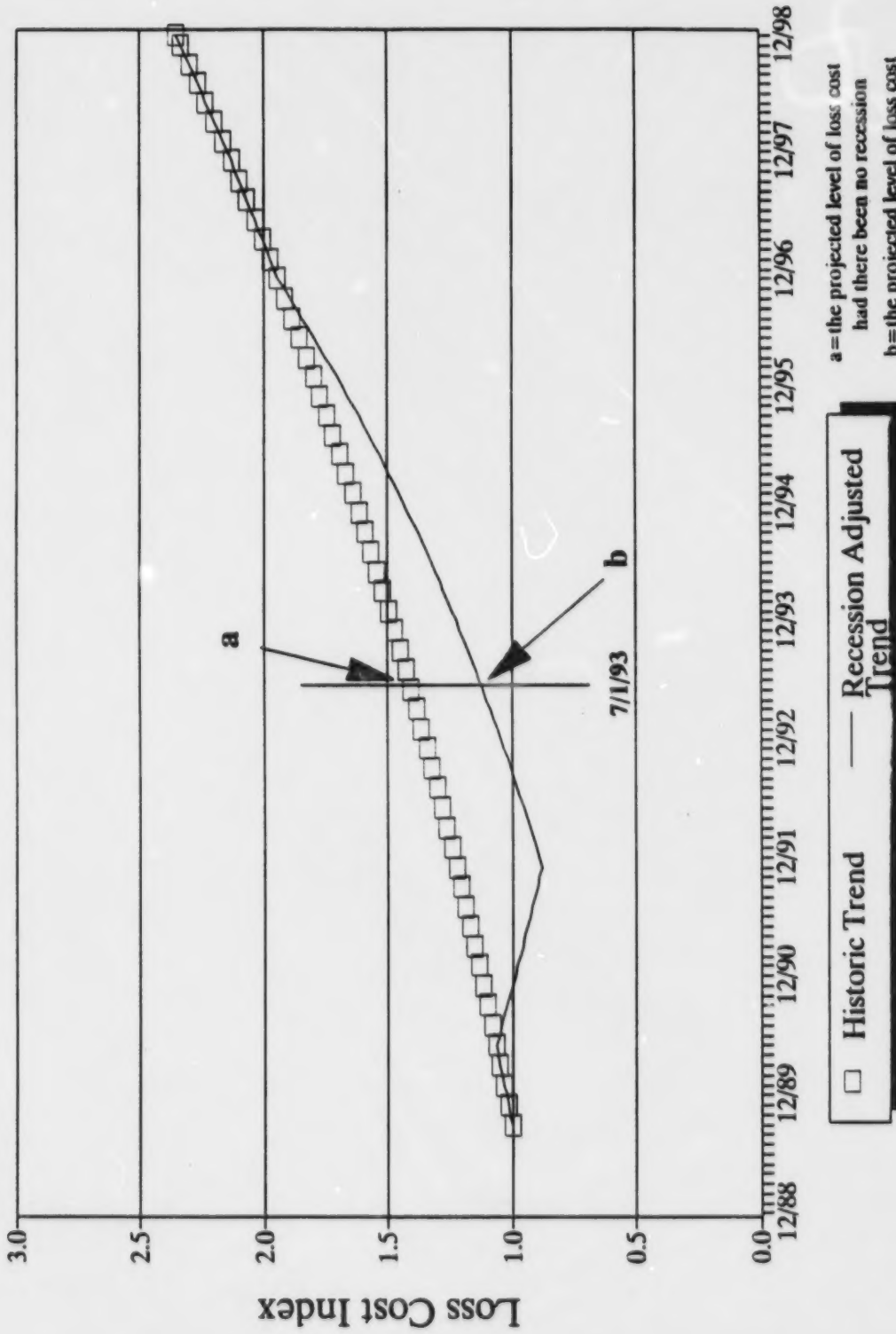
Executive Summary
Calculation of Filing Trend
Income Benefits

Exhibit ES-8

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Technical End of Recession	05/15/91		0.938
Hit Bottom	11/13/91	17.1%	0.880
Midpoint of Filing	07/01/93		1.140
End of Recovery	11/11/96		1.942
Filing trend:			3.5%

Income Benefits Trend Assumptions



Executive Summary

Exhibit ES-10

Calculation of Baseline Loss Costs

(Application of the Trend Factor, ULAE Factor, and GST Factor)

	Bodily Injury Liability (1)	Accident Benefits					Uninsured Underinsured Property		
		Income (2)	Medical (3)	Death (4)	Funeral (5)	Quebec (6)	Motorist (7)	Motorist (8)	Damage (9)
(1) Discounted Loss Cost:	\$239.73	\$17.23	\$12.23	\$1.03	\$0.18	\$0.25	\$16.00	\$3.40	\$89.84
(2) Annual Loss Cost Trend:	8.0%	3.5%	15.8%	-4.8%	-4.8%	-0.9%	14.1%	-5.2%	4.3%
(3) Length of Tread (Years)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
(4) Trended Loss Cost:	\$321.16	\$19.63	\$21.36	\$0.85	\$0.15	\$0.24	\$26.41	\$2.78	\$105.43
(5) ULAE Factor	1.067	1.067	1.067	1.067	1.067	1.067	1.067	1.067	1.067
(6) GST Factor:	1.014	1.015	1.009	1.004	1.069	1.009	1.017	1.014	1.043
(7) Baseline Loss Cost:	\$347.48	\$21.26	\$23.00	\$0.92	\$0.17	\$0.26	\$28.66	\$3.00	\$117.33

Executive Summary
Relative Income Benefits Loss Costs
Population Distribution by Category

Exhibit ES-11

<u>Population by Category</u>	
<u>(1)</u>	<u>(2)</u>
Employed	51.6%
Unemployed	4.0%
Pre-School	6.9%
Elementary School	12.2%
Secondary School	5.9%
Post-Secondary School	3.3%
Caregivers	7.5%
All Other	1.0%
Retired	10.7%
Child Care-Caregivers	7.5%
Child Care-Employed	51.6%

Notes:

1. Estimated from 1986 Ontario Census data and from "Statistics Canada," November 1990.
2. Column (2) adds to more than 100% because the various cells are not mutually exclusive (e.g., a college student can also be employed).

Executive Summary**Exhibit ES-12****Relative Income Benefits Loss Costs****Relative Accident Frequency****Relative Accident
Frequency by Category**

<u>(1)</u>	<u>(2)</u>
Employed	1.00
Unemployed	1.00
Pre-School	0.25
Elementary School	0.45
Secondary School	1.00
Post-Secondary School	1.70
Caregivers	1.00
All Other	1.00
Retired	0.40
Child Care-Caregivers	1.00
Child Care-Employed	1.00

Note:

(2) From Appendix 6, Exhibit 2, line (11).

Executive Summary
 Relative Income Benefits Loss Costs
 Relative Claim Frequency

Exhibit ES-13

Relative Claim Frequency by Category

Income Benefits Category (1)	Relative Accident Frequency (2)	Claim Frequency Adjustment for Utilization (3)	Claim Frequency		
			Pre-OMPP (4)	OMPP (5)	TRA (6)
Employed	1.00	1.10	1.00	1.10	1.10
Unemployed	1.00	1.00	1.00	1.00	1.00
Pre-School	0.25	1.00	0.25	0.25	0.25
Elementary School	0.45	1.00	0.45	0.45	0.45
Secondary School	1.00	1.00	1.00	1.00	1.00
Post-Secondary School	1.70	1.00	1.70	1.70	1.70
Caregivers	1.00	1.00	1.00	1.00	1.00
All Other	1.00	1.00	1.00	1.00	1.00
Retired	0.40	1.00	0.40	0.40	0.40
Child Care-Caregivers	1.00	1.00	1.00	1.00	1.00
Child Care-Employed	1.00	1.00	1.00	1.00	1.00

Notes:

- (2) From Appendix 6, Exhibit 2, line (11).
- (3) Assumed increases in utilization due to availability of higher benefit levels under OMPP and TRA.
- (4) From Column (2).
- (5) Column (2) times Column (3).
- (6) Column (2) times Column (3).

Executive Summary
Relative Income Benefits Loss Costs
Average Income Benefits

Exhibit ES-14

Average Income Benefits Costs by Category

Income Benefits Category (1)	Population by Category (2)	Present Value of Total Income Benefits Cost		
		Pre-OMPP (3)	OMPP (4)	TRA (5)
Employed	51.6%	\$2,512	\$5,733	\$7,672
Unemployed	4.0%	1,256	5,161	12,272
Pre-School	6.9%	0	609	3,539
Elementary School	12.2%	0	1,152	5,441
Secondary School	5.9%	0	2,314	7,971
Post-Secondary School	3.3%	0	5,161	12,930
Caregivers	7.5%	559	5,161	7,064
All Other	1.0%	559	5,161	5,053
Retired	10.7%	0	4,483	4,376
Child Care-Caregivers	7.5%	0	2,172	6,204
Child Care-Employed	51.6%	0	0	563

Notes:

(2) From Appendix 6, Exhibit 2, line (9).

(3) From Appendix 6, Exhibit 4, Page 4, lines (11) and (12).

(4) From Appendix 6, Exhibit 6, Page 4 and Exhibit 7, Page 5.

(5) From Appendix 6, Exhibit 9, Page 4 and Exhibit 10, Pages 5, 9, and 13.

Executive Summary
Relative Income Benefits Loss Costs
Average Benefits

Exhibit ES-15

Income Benefits Category	Population By Category	Relative Accident Frequency By Category	Claim Frequency Adjustment for Utilization	Present Value of Total Income Benefits Costs		
				Pre-OMPP	OMPP	TRA
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Employed	51.6%	1.00	1.100	\$2,512	\$5,733	\$7,672
Unemployed	4.0%	1.00	1.000	1,256	5,161	12,272
Pre-School	6.9%	0.25	1.000	0	609	3,539
Elementary School	12.2%	0.45	1.000	0	1,152	5,441
Secondary School	5.9%	1.00	1.000	0	2,314	7,971
Post-Secondary School	3.3%	1.70	1.000	0	5,161	12,930
Caregivers	7.5%	1.00	1.000	559	5,161	7,064
All Other	1.0%	1.00	1.000	559	5,161	5,053
Retired	10.7%	0.40	1.000	0	4,483	4,376
Child Care-Caregivers	7.5%	1.00	1.000	0	2,172	6,204
Child Care-Employed	51.6%	1.00	1.000	0	0	563
(A) Totals				\$1,394	\$4,754	\$7,924
(B) Adjustment Ratios					3.410	5.685
(C) Adjusted Baseline Income Benefits Loss Costs				\$21.26	\$20.64	\$19.89
(D) Relative Income Benefits Loss Costs				<u>\$21.26</u>	<u>\$70.39</u>	<u>\$113.07</u>

Notes:

- (2) Estimated from 1986 Ontario Census data and from "Statistics Canada," November 1990.
(3) From Appendix 6, Exhibit 2, line (11).
(4) Assumed increases in utilization due to availability of higher benefit levels under OMPP and TRA.
(5) From Appendix 6, Exhibit 4, Page 4, lines (11) and (12).
(6) From Appendix 6, Exhibit 6, Page 4 and Exhibit 7, Page 5.
(7) From Appendix 6, Exhibit 9, Page 4 and Exhibit 10, Pages 5, 9, and 13.
(A) $5(A) = \text{The sum of } (2) \times (3) \times (5).$
 $6(A) = \text{The sum of } (2) \times (3) \times (4) \times (6).$
 $7(A) = \text{The sum of } (2) \times (3) \times (4) \times (7).$
(B) $6(B) = 6(A) / 5(A)$
 $7(B) = 7(A) / 5(A)$
(C) Adjusted baseline loss costs from Actuarial Report, Section 5, Subsection 2.
(D) $5(D) = 5(C).$
 $6(D) = 6(C) \times 6(B).$
 $7(D) = 7(C) \times 7(B).$

Executive Summary
Derivation of Ontario-Based Loss Cost Estimates
For Accident Benefits Under OMPP and TRA

Exhibit ES-16

Accident Benefits	<u>Ontario-Based Estimated Loss Costs</u>	
	OMPP	TRA
(1)	(2)	(3)
Income	\$70.39	\$113.07
Medical	49.69	59.86
Death	3.54	7.19
Funeral	0.51	1.00
Quebec	0.15	0.08
<u>Accident Benefits</u>	<u>\$124.28</u>	<u>\$181.20</u>

Notes:

- (2) From Actuarial Report, Section 5, Subsection 2
- (3) From Actuarial Report, Section 5, Subsection 2

Executive Summary
Derivation of Final Loss Cost Estimates
For Accident Benefits Under OMPP and TRA

Exhibit ES-17

Under OMPP

Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	OMPP Threshold Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$70.39	0.49	\$34.49	0.321	\$62.61
Medical	49.69	0.64	31.80	0.321	45.81
Death	3.54	1.16	4.11	0.321	3.66
Funeral	0.51	0.89	0.45	0.321	0.50
Quebec	0.15	1.00	0.15	0.321	0.15
<u>Accident Benefits</u>	<u>\$124.28</u>		<u>\$71.00</u>		<u>\$112.73</u>

Under TRA

Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	TRA Deductible Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$113.07	0.49	\$55.40	0.284	\$99.60
Medical	59.86	0.64	38.31	0.284	54.83
Death	7.19	1.16	8.34	0.284	7.46
Funeral	1.00	0.89	0.89	0.284	0.97
Quebec	0.08	1.00	0.08	0.284	0.08
<u>Accident Benefits</u>	<u>\$181.20</u>		<u>\$103.03</u>		<u>\$162.94</u>

Notes:

- (2) From Actuarial Report, Section 5, Subsection 2
- (3) From Appendix 9, Exhibit 3
- (4) (2) x (3)
- (5) From Actuarial Report, Section 5, Subsection 2
- (6) $(2) \times (5)^{0.5} + (1 - (5)^{0.5}) \times ((2) + (4)) / 2$

Executive Summary
Indicated Premiums for
Policy Period Beginning July 1, 1992

Exhibit ES-13

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
(1) Total Estimated Loss Costs	\$774.75	\$592.83	\$618.88
(2) Expense Constant	\$51	\$51	\$51
(3) Profit Margin	\$64	\$50	\$52
(4) <u>Variable Expense Provision</u>	<u>\$174</u>	<u>\$135</u>	<u>\$140</u>
(5) <u>Total Premium</u>	<u>\$1,064</u>	<u>\$829</u>	<u>\$862</u>

Notes:

- (1) From Exhibit AR-25
- (2) From Exhibit AR-26
- (3) From Exhibit AR-26
- (4) From Exhibit AR-26

Executive Summary
Summary of Indicated Premium
For Policy Period Beginning July 1, 1992

Exhibit ES-19

<u>Indicated Premium</u>	
TRA	\$862
OMPP	829
Pre-OMPP	1,064

Volume

2

**ACTUARIAL COSTING OF THE ROAD AHEAD:
A COMPARATIVE STUDY**

**ACTUARIAL REPORT
(Part II of III)**

**Prepared by William M. Mercer Limited
for the
Ontario Automobile Insurance Review**

June 1992

 **Ontario**

**ACTUARIAL COSTING OF THE ROAD AHEAD:
A COMPARATIVE STUDY**

**ACTUARIAL REPORT
(Part II of III)**

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Part II -- Actuarial Report

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Introductory Note

This Actuarial Report is the second of three volumes containing the results of a study conducted by William M. Mercer Limited (Mercer) for the Ontario Automobile Insurance Review (OAIR).

About Mercer

Mercer is an international consulting firm which provides professional services to clients around the world in the fields of actuarial science, pensions, benefits, human resources, and insurance. In conducting this study Mercer draws on its extensive background and experience in automobile insurance in Canada and the U.S. The project team brings to this assignment substantial current Ontario-specific background that began with a 1987 study for the Ministry of Financial Institutions on the subject of automobile insurance classifications which was subsequently examined at a hearing in early 1988 before the Standing Committee on the Administration of Justice of the Ontario Legislature.

Mercer's involvement in Ontario automobile insurance continued through the lengthy hearings held by the Ontario Automobile Insurance Board (OAIB), on automobile insurance rates and classifications, and subsequently on the subject of alternative automobile accident compensation systems. After the passage of OMPP, our involvement continued as consultants to the newly created Ontario Insurance Commission (OIC), providing actuarial support services during the transition to OMPP. In the U.S., the project team's experience includes many years of direct involvement with all aspects of automobile insurance transactions in all jurisdictions, including contemporary service as actuarial consultants to regulatory authorities in more than a dozen states.

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The Actuarial Report

Although this Actuarial Report (Part II) is designed to be a freestanding document, the reader should be aware that it is one of three parts, which together constitute the complete report. Part III, Technical Appendix, provides extensive technical background and explanation of our methodology and estimates.

This Actuarial Report is designed for those who wish to obtain a complete understanding of our work without technical review of the underlying support items contained in the Technical Appendix.

For ease of reference, the exhibits that accompany the text of the Actuarial Report are grouped at the end of the text sections and are identified in the upper right hand corner with a numbering scheme that begins with AR (for example, "Exhibit AR-3").

Acknowledgment

This note would not be complete if we did not acknowledge the excellent support we enjoyed from the professional staff at OAIR throughout the process of conducting the study and producing the final report.

SECTION 1

PURPOSE

SECTION 1: PURPOSE

This section contains a brief description of the purposes of this study. OAIR retained Mercer for the primary purpose of conducting an actuarial study that would provide comparative "loss cost"¹ estimates and corresponding "indicated premiums"² for three alternative automobile insurance products for the policy year beginning on July 1, 1992.

The three products under review are:

- the automobile insurance product that was in use prior to the introduction of the Ontario Motorist Protection Plan (OMPP) in June of 1990. For ease of reference, this product is referenced as the "Pre-OMPP" product throughout this report.
- the product that is currently in use, hereinafter referred to as the "OMPP" product, and
- a new product described in a document recently released by the Minister of Financial Institutions, The Honourable Brian Charlton, titled The Road Ahead. For ease of reference this product is referenced in this report as the "TRA" product.

Although there are many differences among the three products, for purposes of emphasizing the major aspects that this study measures, we point out and discuss a key area in which Pre-OMPP, OMPP, and TRA differ with respect to compensating automobile accident victims:

¹ The term "loss cost" generally refers to amounts that an insurance company pays under a policy, and not "loss" in the sense of "profit and loss." In this study we use the terms "loss cost" and "claim cost" interchangeably. The term "loss" is a term of the craft and is used to mean an occurrence that gives rise to a liability by an insurer for an event that is covered under one of its policies.

² The term "indicated premium" refers to the relative premium among the three products that can be reasonably expected if prevailing expense and profit margins are added to the estimated loss cost.

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- The Pre-OMPP product provides limited accident benefits and, beyond accident benefits, is a system based on the idea of establishing fault before recovery can be made.
- OMPP expands accident benefits and limits the right to sue to those injured persons whose injuries involve serious and permanent injuries which are continuing and physical in nature.
- TRA expands accident benefits in scope and in amount, allows all injured persons to sue for non-economic damages -- subject to an indexed deductible of \$15,000 [\$5,000 for cases brought under the Family Law Act (FLA)] -- and eliminates the right to sue for economic damages.

The three products are described in detail in Section 3 of this Actuarial Report.

The reader should keep in mind that this study serves as input to assist policy makers in their deliberations in considering different automobile insurance product alternatives. The purpose is not the estimation of the rates that insurance companies will file with the OIC under TRA. The rates that individual companies will file with the OIC cannot be known or predicted. Rates among companies under TRA can be expected to vary widely, as they do now. In addition, any changes in rates, upon implementation of TRA, can be expected to vary by company as different insurers are certain to view differently the impact of the proposed changes on their operations.

Accordingly, the terms "loss cost" and "premium" as used in this report should be viewed not as estimates of absolute cost and premium levels, nor as predictions of the rates that companies will file with the OIC but as estimates of the relative relationship among the three products.

SECTION 2

***CONCLUSIONS**

SECTION 2: CONCLUSIONS

This discussion is divided into three segments: a discussion of our conclusions with respect to loss costs, a discussion of indicated premiums, and a brief summation of key secondary conclusions arising in the course of doing our work.

Indicated Loss Costs

Relying on the data sources described in the report and based on the assumptions we have utilized, also described in the report, our analysis of the estimated relative costs under the Pre-OMPP, OMPP, and TRA products for the policy year beginning on July 1, 1992 yields the following results:

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Income benefits	\$ 21	\$ 63	\$ 100
Medical benefits	23	46	55
Death and funeral benefits	1	4	8
Uninsured motorist coverage	29	10	11
Underinsured motorist coverage	3	2	1
<u>Bodily injury liability coverage</u>	<u>347</u>	<u>115</u>	<u>97</u>
Total of injury coverages	\$ 424	\$ 240	\$ 271
<u>Property coverages (including liability)</u>	<u>350</u>	<u>353</u>	<u>347</u>
<u>All coverages</u>	<u>\$ 775</u>	<u>\$ 593</u>	<u>\$ 619</u>

Note: Numbers do not add precisely due to rounding. All loss costs are weighted to recognize the proportion of the insured population who buy the indicated coverage.

These amounts represent our estimate of the cost per car (to the insurance company) of providing the indicated type of benefit to injured persons and other claimants -- inclusive of all claim settlement expenses, and exclusive of all non-claim settlement expense and profit provisions. For example, the income benefits cost estimate of \$100 (under TRA) consists of two

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amounts: the amount of income actually paid to claimants and the amount that the insurance company pays to process the claim (coverage verification, claim investigation, set-up of appropriate paper and computer files, processing of payments, etc.). At the same time, the \$100 figure does not include provisions for the following items: sales commissions, premium taxes, general overhead, and profit. The reason estimated loss costs are stated in this manner is that the data on which we rely are captured and reported as a single indivisible unit made up of the claim amount proper and certain of the claim settlement expenses, and our calculations build on these data (this is the customary way in which insurance claim statistics are maintained and used in estimating loss costs).

Indicated Premiums

Once loss costs have been estimated, we include a provision for expenses and profit. The following inset summarizes our results:

<u>Premium component</u>	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Estimated loss costs (from above)	\$ 775	\$ 593	\$ 619
<u>Estimated expenses and profit</u>	<u>289</u>	<u>236</u>	<u>243</u>
<u>Total indicated premium</u>	<u>\$ 1,064</u>	<u>\$ 829</u>	<u>\$ 862</u>

These premiums pertain to a single, typical automobile insured for one year. In other words, these are the indicated premiums for a typical coverage package that a typical automobile owner would pay to buy automobile insurance for his average car from an average priced insurance company. Results for different individuals can be expected to vary a great deal under all three products as they have done in the past and as they do today.

Also, these indicated premium estimates reflect global assumptions about expenses, profit margins, etc. In this sense, these premium estimates refer to the premium that would be needed by the average insurer in order to be able to process and pay its expected claims, sales

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commissions, overhead, and taxes; and still be left with a reasonable profit if this average insurer made the identical assumptions we have made with respect to claim incidence rates, claim severity, inflation, expense levels, etc. These indicated premiums represent averages, and do not apply to any single insurer. Therefore, one should be extremely cautious in extrapolating from these indicated premiums any conclusions with respect to any individual insurer or any individual insurance buyer, or any conclusions with respect to comparisons to current average "street premiums."

Key Secondary Conclusions

A study of this scope inevitably produces numerous by-products of the broad conclusions noted above, of which several are noteworthy. Those are summarized below to provide some texture for the numerical results:

Access to Tort

- The proportion of injured persons who are not at fault who can effectively sue for non-economic damages under TRA is estimated to be 18.1%.
- The proportion of injured persons who are not at fault who can sue for damages under OMPP is estimated to be 5.8%.

Cost of Benefits

- The total cost of benefits payable under the automobile insurance policy to injured persons under TRA is estimated to be 13% greater than the total cost of benefits payable under OMPP.

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- The attribution of the 13% increase in the total cost of benefits payable to injured persons under TRA compared to OMPP is as follows:

-- Accident benefits	+ 45%
-- Bodily injury liability (with UM and UIM)	- 15%

Non-economic Damage Awards/Settlements

- The total cost of awards/settlements for non-economic damages recoverable under TRA is estimated to be 45% of the corresponding costs under Pre-OMPP.
- The total cost of awards/settlements for non-economic damages recoverable under OMPP is estimated to be 31% of the corresponding costs under Pre-OMPP.

Scope of Income Benefits Coverage

- The proportion of injured persons who receive income benefits under Pre-OMPP is approximately 62%.
- The proportion of injured persons who receive income benefits under OMPP is approximately 91%.
- The proportion of injured persons who receive income benefits under TRA is approximately 98%.

The conclusions noted in this section represent averages and will apply differently to different policyholders, insurers, and other related entities -- in accordance with their particular circumstances.

SECTION 3

THE PRODUCTS

SECTION 3: THE PRODUCTS

This report deals with three insurance products: Pre-OMPP, OMPP, and TRA. They are defined and compared in this section of the report. First, there is a general description of the various insurance coverages for the benefit of the reader who is not familiar with private passenger automobile insurance. Second, there is an overview which presents, in summarized form, the key components of, and differences among, the three products. A detailed description of each coverage under each of the products is provided in Appendix 11.

Subsection 1: General Description of Insurance Coverages

Under each of the three products, the insurance coverages are as follows (throughout the discussion the term "insured" is generally used to mean the family of the owner of the policy, as well as any passengers or other drivers using the car with the owner's permission):

A. Bodily Injury Liability

This coverage protects the insured against liability arising from an accident that causes bodily injury to another person.

B. Income Benefits

This coverage provides for reimbursement of lost income and dependant care expenses incurred as a result of an accident.

C. Medical Benefits

This coverage provides for reimbursement of reasonable medical, rehabilitation, and attendant care costs.

D. Death Benefits

This coverage provides benefits to the dependants of a deceased insured (for death resulting from an automobile accident).

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E. Funeral Benefits

This coverage provides for reimbursement of funeral expenses incurred for the insured (for death resulting from an automobile accident).

F. Quebec Benefits

This coverage provides, for accidents occurring in Quebec, the option of receiving benefits that are in accordance with those received by Quebec residents under Quebec law.

G. Uninsured Motorist

This coverage protects the insured if bodily injury or property damage is incurred from an at-fault driver who is unidentified or does not have insurance; in this case, the insured collects from his or her own insurer the amount that theoretically would have been paid by the at-fault driver's insurer had that at-fault driver been identified and insured at the required minimum limits of liability.

H. Underinsured Motorist

This optional coverage protects the insured if he or she incurs bodily injury from an at-fault driver who is insured, but who does not have sufficient insurance to cover the liability; in this case the insured collects, from his or her own insurer, the amount of the damage award that is in excess of the at-fault driver's liability coverage and up to the limit of underinsured motorist coverage purchased.

I. Property Damage

This coverage protects the insured against liability arising from an accident that causes damage to the property of another person. Under OMPP and TRA this coverage becomes, essentially, a first party coverage whereby the insured collects from his own insurer for damages to his car caused by another driver.

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J. Collision

This optional coverage generally provides coverage (subject to a deductible) for damage to the insured's vehicle arising out of a collision.

K. Comprehensive

This optional coverage generally provides coverage (subject to a deductible) for damage to the insured's vehicle arising out of a peril other than collision (e.g., theft, vandalism, flood, hail, fire, etc.).

Generally, the differences among the Pre-OMPP, OMPP, and TRA coverages result from differences in tort rights that affect the bodily injury liability coverage (and thus also the uninsured and underinsured motorist coverages) and from differences in the benefits provided by the accident benefits coverages. Property damage coverage was also changed when OMPP was implemented, by making damage to vehicles a first party coverage. Collision and comprehensive coverages remain unchanged under the three products.

The remainder of this chapter provides a more detailed description of the manner in which these coverages differ under Pre-OMPP, OMPP, and TRA. The more detailed descriptions are provided in a format that assumes that the reader has an understanding of the general nature of each coverage as described above.

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Subsection 2: Overview of Pre-OMPP Product

The Pre-OMPP product was effective until June 22, 1990. Its key features are as follows:

A. Bodily Injury Liability

- There is no restriction on access to the tort system.
- Damages awarded to a person are not reduced in consideration of indemnification from collateral sources.
- Judgments for non-economic damages (excluding judgments awarded under the Family Law Act (FLA)) were limited in 1978 by the Supreme Court to \$100,000, and this cap has been allowed to increase in response to inflation so that it is now approximately \$250,000.

B. Income Benefits

- Wage earners and unemployed who have worked for at least six of the previous twelve months:
 - 80% of gross weekly wages for first 2 weeks
 - 80% of gross weekly wages less collateral sources after 2 weeks
 - benefits subject to a maximum of \$140 per week
 - no waiting period
 - payments cease after 104 weeks unless the injury continuously prevents the insured from engaging in any occupation or employment for which he is reasonably suited by education, training or experience.
- Non-wage earners:
 - for disabled housekeepers, \$70 per week for a maximum of 12 weeks.

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C. Medical Benefits

- Coverage is provided for reasonable and necessary medical services within four years of the accident, except those expenses recoverable under any medical, surgical, dental or hospitalization plan or law.
- Coverage is provided for "essential" rehabilitation services, except those expenses recoverable under any medical, surgical, dental or hospitalization plan or law.
- Lifetime benefits are limited to \$25,000 per accident victim.

D. Death Benefits

- For death as a result of an automobile accident, \$10,000 is provided to the spouse of a deceased insured, or to the surviving dependants if there is no surviving spouse.
- \$1,000 is provided to each surviving dependant of the deceased insured.
- \$2,000 is provided to the primary caregiver of a deceased dependant.

E. Funeral Benefits

- Coverage is provided for funeral expenses incurred up to \$1,000 per person.

F. Quebec Benefits

- Quebec-type benefits (for accidents which occur in Quebec) are provided.

G. Uninsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability and property damage coverage benefits.

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H. Underinsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability coverage benefits.

I. Property Damage

- There is no restriction on access to the tort system.

J&K. Collision and Comprehensive

- First party coverage, subject to the applicable deductible, is provided.

Subsection 3: Overview of OMPP Product

The OMPP product became effective on June 22, 1990. Its key features are as follows:

A. Bodily Injury Liability

- A "verbal threshold" was introduced, under which access to tort is restricted to personal injuries resulting in death, or permanent serious disfigurement, or permanent serious impairment of an important bodily function caused by continuing injury which is physical in nature.
- Damages awarded are reduced in consideration of indemnification from collateral sources (benefits from sick leave plans are deducted only if received).
- Judgments for non-economic damages (excluding FLA judgments) were limited in 1978 by the Supreme Court to \$100,000, and this cap has been allowed to increase in response to inflation so that it is now approximately \$250,000.

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B. Income Benefits

- Wage earners:
 - 80% of gross weekly wages less collateral sources (except unemployment insurance)
 - a benefit minimum of \$185 per week was introduced
 - the benefits maximum was increased to \$600 per week
 - a one week waiting period was introduced
 - payments cease after 156 weeks unless the injury continuously prevents the insured from engaging in any occupation or employment for which he or she is reasonably suited by education, training or experience.
- Non-wage earners:
 - benefit of \$185 per week less collateral sources (except unemployment insurance benefits)
 - benefit of \$50 per week for each child in the care of the accident victim, subject to a maximum of \$200 per week
 - a one week waiting period
 - payments cease after 156 weeks unless the injury continuously prevents the insured from engaging in any occupation or employment for which he or she is reasonably suited by education, training or experience.

C. Medical Benefits

- Coverage is provided for "reasonable" medical benefits, as under Pre-OMPP, but benefits are more broadly defined by the enumeration of various types of eligible expenses.
- Coverage for care benefits is added with a limit of \$3,000 per month.

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- Coverage is provided for rehabilitation services, as under Pre-OMPP, but benefits are more broadly defined by the enumeration of various types of eligible expenses.
- The lifetime benefit limit of \$25,000 per accident victim under Pre-OMPP is increased to \$500,000 per person for medical (including rehabilitation) and \$500,000 per person for long-term care.
- The period of eligibility for medical benefits is increased to a maximum of 10 years or 20 years less the age of the victim on the date of the accident.

D. Death Benefits

- Coverage is increased to \$25,000 to the spouse of a deceased insured, or to the surviving dependants if there is no surviving spouse.
- Coverage is increased to \$10,000 to each surviving dependant of the deceased insured.
- Coverage of \$10,000 is provided to the primary care giver of a deceased dependant.

E. Funeral Benefits

- Coverage is provided for actual funeral expenses incurred, subject to a maximum of \$3,000 per person.

F. Quebec Benefits

- The option of receiving Quebec-type benefits (for accidents which occur in Quebec) is provided.

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G. Uninsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability and property damage coverage benefits.

H. Underinsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability coverage benefits.

I. Property Damage

- Coverage is revised so that:
 - access to tort is eliminated in the case of damage to automobiles
 - the insured collects under his or her own property damage coverage for damage to the insured automobile, to the extent that the insured is not at fault
 - the coverage provides liability protection for damage to property other than automobile.

J&K. Collision and Comprehensive

- First party coverage, subject to the applicable deductible, is provided.

In addition to these standard coverages, several optional accident benefit coverages, which generally increase the accident benefits already provided, were made available.

Subsection 4: Overview of TRA Product

The TRA product has been proposed to become effective in 1992, and for the purpose of this study we were asked to assume that it will become effective July 1, 1992. Its key features are as follows:

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A. Bodily Injury Liability

- There is no tort restriction for non-economic damages.
- There is no tort remedy for economic damages.
- A deductible of \$15,000 applies to all tort recoveries for non-economic damages other than those actions brought under the Family Law Act.
- A deductible of \$5,000 applies to all tort recoveries under the Family Law Act.
- The deductible amounts of \$5,000 and \$15,000 are indexed to increase with inflation.
- Judgments for non-economic losses damages (excluding FLA judgments) were limited in 1978 by the Supreme Court to \$100,000, and this cap has been allowed to increase in response to inflation so that it is now approximately \$250,000.

B. Income Benefits

- Wage Earners
 - 90% of net weekly wages less collateral sources (except unemployment insurance benefits)
 - benefits maximum increased to \$1,000 per week
 - benefits minimum retained at \$185 per week
 - income benefit is replaced at age 65 with an income supplement equal to 2% of the income benefit for each year of income benefits received, with a maximum of 70% of the income benefit and a minimum of \$185 per week
 - part-time wage earners' benefits are increased to a full-time equivalent benefit after 6 months of disability

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- benefits for wage earners over age 65 are phased down over 4 years to the minimum income supplement level (\$185 per week)
 - all benefits and benefit maximums (except the income supplement minimum) are indexed to the consumer price index (CPI)
 - reimbursement for incurred dependant care expenses, with maximums per dependant
 - payments after 104 weeks based on assessment of reduced earning capacity.
- Non-wage earners
 - those employed at least one month in the last seven and between ages 16 and 65 are treated as wage earners, with income replacement benefits equal to 90% of net prior wages; indexed
 - those unemployed at least 6 months in the last 42 and between ages 16 and 65 receive \$185 per week for six months, then 90% of net prior income; indexed
 - students receive indexed lump sum payments for lost school years (and lost semesters for secondary and post-secondary school students); students over age 16 also receive indexed income replacement benefits which begin at \$185 per week and rise to 90% of net average weekly earnings (based on the Ontario average industrial wage) at age 30
 - those caring for dependants receive \$250 per week for the first dependant, \$50 per week for each additional dependant
 - those who have temporarily left the work force to care for dependants after six months may choose between the dependant care benefit and the income replacement benefit for which they would be eligible
 - those over age 16 not qualified for any of above receive \$185 per week; not indexed.

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C. Medical Benefits

- Coverage is provided for "reasonable" medical benefits and costs of attendant care, as under OMPP.
- Limit of \$3,000 per month for attendant care is maintained, but the monthly limit is indexed.
- Lifetime benefit limit of \$500,000 per person for medical (including rehabilitation) and \$500,000 per person for attendant care are eliminated.
- The 10 year (or 20 years less age at time of accident) limit on the duration of the supplementary medical and rehabilitation benefit period is eliminated.

D. Death Benefits

- Coverage is revised to 187.2 times the net weekly wage (was \$25,000) to the surviving spouse of a deceased insured, or to the surviving dependants if there is no surviving spouse, subject to a minimum of \$50,000 and a maximum of \$200,000; indexed.
- Coverage remains at \$10,000 to each surviving dependant of the deceased insured; indexed.
- Coverage remains at \$10,000 to the primary caregiver of a deceased dependant; this coverage is also extended to other surviving dependants if the primary caregiver and spouse are also deceased; indexed.
- \$50,000 is paid if the deceased is not an earner; indexed.

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E. Funeral Benefits

- Coverage is provided for actual per person funeral costs, subject to a maximum of \$6,000; indexed.

F. Quebec Benefits

- The option of receiving Quebec-type benefits (for accidents occurring in Quebec) is provided.

G. Uninsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability and property damage coverage benefits.

H. Underinsured Motorist

- Coverage is provided to the insured on a basis that is consistent with bodily injury liability coverage benefits.

I. Property Damage

- Coverage remains the same as under OMPP.

J&K. Collision and Comprehensive

- First party coverage, subject to the applicable deductible, is provided.

It is contemplated that optional accident benefit coverages will be available under TRA. (However, they are not part of this study.)

SECTION 4

COSTING METHODOLOGY

SECTION 4: COSTING METHODOLOGY OVERVIEW

The purpose of this section is to provide an introduction to the methodology used to develop the estimated comparative costs under the Pre-OMPP, OMPP and TRA products, for policies issued from July 1, 1992 through June 30, 1993 (policy year 92/93 or PY 92/93). This section is presented in the following subsections:

Subsection 1: Overview

This subsection provides a highly summarized executive overview of the overall methodology that was employed.

Subsection 2: Data Sources

This subsection describes the principal data sources upon which the study is based.

Subsection 3: General Costing Process

This subsection is a primer on costing for automobile insurance, and uses a simple example to give the reader an understanding of a "typical" costing process. It provides a summarized introduction to costing that will then serve as a useful backdrop for understanding the process used to estimate the comparative costs under Pre-OMPP, OMPP, and TRA.

Subsection 4: Preview of Specific Costing Process Used

This subsection contains a preview of the specific ratemaking process used to determine the comparative loss costs for the Pre-OMPP, OMPP, and TRA products. The discussion explains how the general costing process described in the preceding subsection is used and modified, as needed, for this analysis.

Section 5 then presents in detail the methodology and assumptions that are used to develop the comparative cost analysis.

Subsection 1: Overview

First, we estimate a "baseline" loss cost for each coverage (losses per insured vehicle), with losses discounted to reflect the time value of money, adjusted to PY 92/93 loss levels, and including provision for allocated loss adjustment expense (ALAE), unallocated loss adjustment expense (ULAE), and the Federal Goods and Services Tax (GST). (The terms ALAE and ULAE are defined later in Subsection 3.) These estimated baseline loss costs are based largely on historical loss experience from the pre-OMPP period.

We use loss experience for accidents occurring between July 1, 1989 and June 30, 1990 (which is referred to as "accident year 1989/1990" and abbreviated as AY 89/90) and for prior accident years. We use loss costs from AY 88/89 and AY 89/90 to estimate the actual average loss costs during the Pre-OMPP period, and discount the loss costs based on historical claim payment patterns and an interest rate of 8.5% per year. We estimate the long-term frequency and severity trend factors (annual rates of change) and adjust these long-term trend factors to reflect the impact of the 1990/91 recession. We then use the adjusted trend factors to project the Pre-OMPP loss costs to the level expected for PY 92/93. Finally we adjust them to include provision for ULAE and GST (ALAE is already included with the loss experience). The baseline loss costs represent the estimated loss costs for PY 92/93, **prior** to adjusting for environmental and coverage differences among Pre-OMPP, OMPP, and TRA.

Second, we adjust the baseline loss costs to reflect the coverage differences among Pre-OMPP, OMPP, and TRA. These adjustments are primarily for the bodily injury liability and accident benefits coverages, and are made to reflect the significant differences in tort rights and benefit levels that exist under each of the three products. These adjustments are based on review of the laws, demographic and economic data, data from the Osborne Inquiry, knowledge of loss experience from other jurisdictions, and professional judgment.

Third, we adjust the loss costs of the three products to include provisions for expenses and profit. Our analysis of the expense provisions is based on the latest compilation of industrywide expense data. We have included in our cost estimates provisions for sales commissions, premium taxes, other acquisition and general expenses that we believe are reasonable as an aggregate estimate appropriate for all Ontario insurers, and consistent with the actual historical experience.

Our analysis of the profit provision is based on a target return on equity that is based on review of recent historical returns on equity of the financial services industry and on various other financial assumptions. We include in our cost estimates provision for an underwriting profit which we believe will, when combined with investment income, result in an after-tax rate of return that is reasonable for purposes of this study. The specific assumption made in this area should not be construed as our judgment as to what constitutes a reasonable prospective rate of return for Ontario insurers. We merely need to reflect a reasonable profit benchmark in order to conduct our analysis. Later in this report we indicate the effect of selecting target returns that are lower or higher.

Subsection 2: Data Sources

The principal data sources upon which this study is based are:

- industry loss experience in Ontario through June 30, 1990, valued as of December 31, 1990, as compiled by the Insurance Bureau of Canada (IBC)
- the bodily injury liability database from the Osborne Inquiry
- Ontario economic, demographic and automobile injury data
- aggregate insurance industry expense experience for private passenger automobile insurance in Ontario, as contained in the 1989 and 1990 IBC Expense Allocation Program Results (also referred to as the Direct Expense Report)

- aggregate historical rates of return on equity for the financial services industry
- Quebec insurance data.

In the following paragraphs we provide a brief description of each of these data sources and explain how each is used in the analysis.

The industry loss experience compiled by the IBC forms the basis upon which we estimate the Pre-OMPP loss costs which in turn are our "jumping off points" in estimating the OMPP and TRA loss costs. We use the information contained in IBC's 1990 AIX Ontario Loss Development Exhibits. This data source includes: reported losses (including ALAE) and reported claim counts by accident half-year, valued as of December 31, 1990 and at prior periods every six months; and earned car years by accident half-year. These data, supplemented in some cases with other data published by IBC, are the source of our estimates of Pre-OMPP loss costs.

The 1986 Osborne Inquiry contains bodily injury liability cost information on 1,394 Ontario private passenger automobile claimants with claim settlement dates primarily in 1986. We rely on this data source to help us estimate the cost impact of the changes to the tort liability system that were introduced under OMPP and that are proposed under TRA.

The Ontario economic data that we reference in this study consist primarily of information on the Gross Domestic Product from 1978 through the second quarter of 1991. In addition, we reviewed Ontario unemployment rates and the consumer index for gasoline prices. This information is used to assess the manner in which insurance claim frequencies appear to be related to general economic conditions, in order to estimate the impact that the 1990/91 recession will have on long-term trends in claim frequencies.

The Ontario demographic data are used to estimate the distribution of population among the several categories of claimants under accident benefits.

The Ontario automobile injury data are used to estimate the frequency of injuries by claimant category for accident benefits.

The aggregate insurance industry expense data are based on information contained in the IBC 1989 and 1990 Expense Allocation Program Results and are used to derive the expense assumptions used in deriving indicated premiums.

The aggregate historical rates of return on equity are based on compilations of rates of return for various sectors of the financial services industry as published in Report on Business and are used to select a target return on equity.

The Quebec insurance data are based on information obtained through interviews and telephone discussions with representatives of Société de l'assurance automobile du Québec and are used to adjust the baseline loss costs.

Subsection 3: General Costing Process

In our analysis we use what is commonly referred to as a loss cost, or pure premium, costing methodology. Although we are not involved in "ratemaking" per se, and are not determining rates to be "filed," it is useful to describe our process as one which is similar to that which would be followed by an insurer. The key elements of our approach are common to many costing situations, and an understanding of these key elements is essential to understanding how we determine the comparative costs and premiums for each of the three products.

The objective of the costing process is to estimate average automobile insurance premiums that will be sufficient to pay for the following:

- **losses:** the cost of all claims arising from accidents that occur under policies written at the given rates, regardless of when the claim is ultimately paid
- **allocated loss adjustment expenses (ALAE):** the claim adjustment costs, such as legal fees and court costs, that are associated with specific claims (in the remainder of this report, the term "losses" is used to include both "losses" and "ALAE")
- **unallocated loss adjustment expenses (ULAE):** the claim adjustment costs, such as claim department overhead, that cannot be assigned to any specific claim
- **sales commissions:** the amounts that insurers pay agents or brokers, stated as a percentage of the premium, including profit-sharing agreements that commonly exist between agents or brokers and insurers
- **other acquisition expenses:** the expenses associated with acquiring business and not included in commissions, advertising, premium collection, etc.
- **premium tax:** the amount that insurers pay as a special gross receipts tax on insurance premiums
- **general expenses:** those general overhead expenses associated with underwriting, policy issuance, corporate office expenses, etc.

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- **target underwriting profit (UP):** the amount which, when combined with expected return from invested assets, will result in the target rate of return on equity; the challenge is to estimate accurately the other costs so that the target underwriting profit will, in fact, be achieved.

The general approach³ that we follow can be stated algebraically as follows:

$$\text{Indicated Premium} = ((\text{EELC} \times F_{\text{ULAE}}) + \text{FE} + \text{UP}) \div (1.000 - \text{VE})$$

where:

- **EELC** is the estimated expected average loss cost.
- **F_{ULAE}** is the factor to include unallocated loss adjustment expense.
- **FE** are non-claim expenses assumed to be constant on a "per car" basis.
- **UP** is the target underwriting profit.
- **VE** are those expenses that are expressed as a percentage of total premium.

In this example the EELC includes ALAE, and is discounted to reflect the time value of money.

³ The formulation we use is an equivalent variant of standard ratemaking algorithms. We need to make this adjustment to recognize the conventions we have adopted to (1) use discounted loss costs and (2) use a flat dollar profit provision.

For example, assume that the estimated expected loss cost is \$100, ULAE is 7.5% of losses, fixed expenses are \$50, the target underwriting profit is \$8, and variable expenses are 16% of the total premium charge. Then, the "Indicated Premium" would be:

$$\frac{((\$100 \times 1.075) + \$50 + \$8)}{(1.000 - .160)} = \$197.02$$

Thus, the major steps in the process are to determine the estimated expected loss cost, the ULAE provision, the expense provisions (both fixed and variable), and the target underwriting profit provision. Each of these steps is discussed below.

A. Estimated Expected Loss Cost (EELC)

Estimated Expected Loss Cost (EELC) - This is typically determined as follows, where one starts with incurred losses and builds up to an estimate of the EELC:

Incurred Losses = Paid Losses + Case Reserves (for claims that have been reported but not yet closed).

Estimated Ultimate Incurred Losses = Incurred Losses x Loss Development Factor,

where the Loss Development Factor is used to adjust the Incurred Losses to include provision for claims that have been incurred but not reported (IBNR) and for subsequent development of the case reserves. Loss development factors are normally based on a review of the historical emergence of actual losses. For example, if review of historical loss data indicates that reported losses valued as of a specific point approximately double by the time they are ultimately settled and paid, then a loss development factor of 2.000 could be used as a multiplier to adjust the incurred losses from that point to their estimated ultimate settlement value.

$$\begin{aligned} \text{Estimated Historical Loss Cost} = \\ (\text{Estimated Ultimate Incurred Losses}) \div (\text{Earned Car Years}), \end{aligned}$$

where the Earned Car Years represent the exposure units corresponding to the time period over which the losses were incurred. For example, if the estimated ultimate incurred losses for a given one-year period are \$1,000,000, and 10,000 automobiles were insured over that period, the resulting estimated historical loss cost would be \$100 (\$1,000,000/10,000).

$$\begin{aligned} \text{Estimated Expected Loss Cost} = \\ \text{Estimated Historical Loss Cost} \times \text{Discount Factor} \times \text{Trend Factor}, \end{aligned}$$

where the discount factor is used to express the loss cost on a present value basis, and the trend factor is used to adjust the historical loss cost to the level of claim severities and frequencies estimated to prevail during the time that the revised rates will be in effect. For example, assume that the historical loss costs are for all accidents occurring in 1991 (midpoint of July 1, 1991); that on average premium income is held for one year before losses are paid, and earns interest at the rate of 8.5% per year; that rates are being determined for a period with an average accident date of July 1, 1993; and that loss costs are expected to increase at the rate of 10% per year as the result of claim severity and frequency trends. Then, the Estimated Expected Loss Cost in this example would be \$111 (\$100 discounted by 8.5% and then increased by 10% per year for two years).

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B. ULAE

ULAE = Expected costs of settling claims, excluding ALAE.

This amount, which is usually expressed as a percentage of losses (including ALAE), is normally selected based on review of historical ULAE payments as a ratio to losses (including ALAE) and on expectations regarding future claim department overhead costs.

C. Provision for Expenses

Provision for Expenses = Expected future expenses (excluding ALAE and ULAE), expressed as either a percentage of premium, or a cost per vehicle insured.

The typical components of expenses, along with provisions shown solely for illustrative purposes, are as follows:

• Sales Commissions	10.0% of premium
• Other Acquisition expenses	3.0% of premium
• Premium Taxes	3.0% of premium
• Total Variable Expenses (sum of the above)	16.0% of premium
• General Expenses	\$50 (constant amount)

The sales commission percentage normally includes provision for contractual commission rates as well as profit sharing agreements. Premium taxes are levied as a percentage of premium, and hence are known exactly (assuming no future changes in premium tax rates). Other acquisition and general expenses are usually estimated based on a review of historical costs modified by expectations regarding future costs.

D. Provision for Underwriting Profit

Underwriting Profit = The provision in the premium such that the total expected rate of return on the company's equity, including income from all sources, is equal to the company's target rate of return.

This provision depends on such considerations as:

- the target after-tax rate of return
- the ratio of premium to equity
- the cash flow associated with the particular line of business
- the yield that is anticipated will be realized on invested assets, which include assets associated with the equity, loss reserves, and unearned premium reserves
- the expected income tax rates.

If the loss costs have been discounted to reflect the time value of money, then the provision for profit would be expected to be relatively large, since any income expected to be earned from the investment of the assets supporting the loss reserves has already been taken into account through the discounting of the losses.

If the loss costs have not been discounted for the time value of money, then the provision for profit would be expected to be relatively small, possibly negative, since significant income can be expected to be earned from the investment of the assets supporting the loss reserves.

Above is presented an overview of a typical costing process, highlighting the major steps that are followed. The next subsection provides a preview of how this process is applied in this study.

Subsection 4: Preview of Specific Costing Process Used

A. Estimated Expected Loss Costs

We estimate expected loss costs to be consistent with loss costs that would be estimated for rates to be effective on July 1, 1992 for one year.

The Estimated Historical Loss Cost is calculated as the weighted average of the estimated historical loss costs for AY 88/89 and AY 89/90, using weights of 30%/70% to give more weight to the more recent year of experience. The Estimated Ultimate Incurred Losses for these accident periods are estimated based on actual incurred losses valued as of December 31, 1990 and loss development factors based on review of the historical Pre-OMPP loss experience. The estimated ultimate incurred losses are then divided by the actual earned car years to calculate the historical loss costs (undiscounted) for these accident periods. These historical loss costs are then discounted, based on the historical payment patterns of each line of insurance and on an annual interest rate of 8.5%. These and all the calculations previewed in this section are described in detail in Section 5 of this report.

The Estimated Expected Loss Cost is then determined by applying a trend factor to adjust the Historical Loss Cost to the level of claim frequencies and severities expected to prevail during PY 92/93. The annual trend factors selected are based on a review of the actual Pre-OMPP historical claim frequencies and severities, and on adjustments for the impact that the 1990/91 recession is expected to have on claim frequencies. The total period of time over which the trend is applied is from 9/12/89 (the midpoint of the 30/70 weighting of AY 88/89 and AY 89/90) to 7/1/93 (the midpoint of PY 92/93).

B. Baseline Loss Cost

The Estimated Expected Loss Cost is then adjusted to include ULAE, and also adjusted to include the GST.

The provision for unallocated loss adjustment expense is calculated based on review of the IBC 1989 Direct Expense Report.

At this step in the calculation we also include an adjustment to reflect the impact of the GST on the costs of the goods and services that insurance pays for. This adjustment is necessary because the Pre-OMPP loss experience is prior to the implementation of GST, and hence does not reflect the increased costs due to GST. It should be noted that the GST does not apply directly to insurance premiums; the purpose of the adjustment is to reflect the fact that the costs of the goods purchased by insurance (e.g., automobile body parts) will include the GST.

The Estimated Expected Loss Cost, adjusted to include the discounting of losses, trended to PY 92/93, and adjusted to include provision for ULAE and to reflect the GST is referred to as the baseline loss cost (determined for each coverage). For each of the products, it is adjusted to reflect coverage differences and to include provision for expenses (other than claim adjustment expenses) and profit.

C. Coverage Differences

The baseline loss costs must be adjusted to reflect the significant coverage differences that exist among the three products. Initially, there is a series of adjustments that reflect relatively minor differences in certain assumptions used to determine the baseline loss costs:

- adjustments to the annual rates of trend for medical benefits and income coverages under OMPP and TRA, in consideration of the fact that severity trends for these coverages are expected to have been reduced under OMPP and are likely to be reduced further under TRA
- adjustments to the annual rates of trend for all coverages (except comprehensive) under TRA, in consideration of the fact that loss cost trends for these coverages are likely to be reduced under TRA, because of increased attention to road safety programs
- adjustments to reflect the fact that ULAE and GST would differ slightly under OMPP and TRA, as compared to their values under Pre-OMPP.

The adjusted baseline loss costs provide the base from which the estimated impact of the differences among the three products can be calculated.

Next, significant coverage differences among the products are accounted for. For example, death benefits vary based on characteristics of the deceased such as age, marital status, employment status, number of dependants, and whether the deceased is the head of household. For each demographic category of deceased accident victim, the benefit levels are generally different under Pre-OMPP, OMPP, and TRA. Therefore, we develop estimates of the relative costs for this coverage as follows:

- We estimate the distribution of deceased victims by relevant demographic category.
- We determine the amount of the benefits (including ALAE) for each demographic category that would be payable under Pre-OMPP, OMPP, and TRA.

- We calculate the amount payable, on average, over all demographic categories for each of the three products.
- We calculate the OMPP average amount payable as a ratio to the Pre-OMPP average amount payable.
- We calculate the TRA average amount payable as a ratio to the Pre-OMPP average amount payable.

These ratios of amounts payable (cost relativities) are then applied to the adjusted baseline loss costs to derive the estimated loss costs that are adjusted for coverage differences. The full set of adjustments, which represents a major element of this study, is described in Section 5 of this report.

D. External Adjustment

The estimated loss costs, adjusted for coverage differences, are based primarily on Ontario loss experience. To gain additional perspective on the accident benefits coverages, we also estimate the loss costs for these coverages based on actual loss experience for Quebec, a province that has a "pure" first party system. The Quebec loss experience is first adjusted for identifiable demographic differences and differences in accident rates between Quebec and Ontario, then compared to estimates of loss costs for Quebec-type benefits that are based solely on Ontario experience. Based on this comparison, we make further adjustments to our estimates of the Ontario loss costs for OMPP and TRA.

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E. Provisions for Expenses

The provisions for non-claim expenses are based on a review of historical industrywide experience. The same provisions are used for Pre-OMPP, OMPP, and TRA. The provisions comprise the following components and amounts:

• Sales Commissions	10.2%
• Other Acquisition expenses	3.1%
• Premium Taxes	3.0%
• Total Variable Expenses (Total of above items)	16.3%
• General Expenses (overhead) (expressed as a constant)	\$51

F. Provision for Underwriting Profit

The provision for underwriting profit is based on the following major assumptions:

- an 11.5% target after-tax rate of return on equity
- a 2.25 ratio of premium to equity
- an 8.5% pre-tax yield on investments
- a 45.0% combined (Federal and Provincial) income tax rate
- loss costs are calculated on a discounted basis, to reflect their true economic value
- a lag of 1.2 months in the collection of premium

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- premium taxes, 50% of other acquisition expenses and 50% of the expense constant are paid on the policy effective date
- the remaining 50% of other acquisition expenses and of the expense constant are paid evenly over four quarters
- surplus supporting the premium is held for one year (i.e., until the policy expires)
- all profit is realized on the day a policy is issued.

These assumptions apply to the Pre-OMPP, OMPP, and TRA products.

SECTION 5

COSTING THE PRODUCTS

SECTION 5: COSTING THE PRODUCTS

The purpose of this section is to present the actual derivation of the comparative cost estimates under the Pre-OMPP, OMPP, and TRA products, for the policy year beginning July 1, 1992.

This section is organized as follows:

Subsection 1: Baseline Loss Costs

In this subsection we develop the PY 92/93 "baseline" loss costs.

Subsection 2: Coverage Adjustments

In this subsection the baseline loss costs are adjusted to reflect the differences among the three products.

Subsection 3: External Adjustment and Final Loss Cost Estimates

In this subsection the adjusted baseline loss costs for the accident benefit coverages, which are based primarily on Ontario experience, are adjusted to give some recognition to the experience observed in Quebec, which has a pure first party system. The subsection concludes with a summary of estimated loss costs for PY 92/93 for each of the three products.

Subsection 4: Expenses and Profit

In this subsection provisions for expenses and profit are derived and added to the loss costs for the three products to calculate estimated relative premiums.

Subsection 5: Comparison of Estimates

In this section we display a comparison of the indicated average premiums for the Pre-OMPP, OMPP, and TRA products.

Subsection 1: Baseline Loss Costs

A. Baseline loss costs

$$\text{Step 1.} \quad \frac{\text{(Incurred Losses)}}{\text{times}} \times \text{(Loss Development Factors)} = \text{(Estimated Ultimate Incurred Losses)}$$

Step 2. (Estimated Ultimate Incurred Losses)
divided by
(Earned Car Years)
equals
(Estimated Historical Loss Cost)

Step 3. (Estimated Historical Loss Cost)
times
(Discount Factor)
equals
(Estimated Discounted Historical Loss Cost)

Step 4. (Estimated Discounted Historical Loss Cost)

times

(Trend Factor)

equals

(Estimated Expected Loss Cost)

Step 5. (Estimated Expected Loss Cost)

times

(Provision for ULAE)

times

(Provision for GST)

equals

(Baseline Loss Cost)

In this subsection, we first discuss the data that are used in the analysis; then we discuss each of the above five steps.

1. Data

Our primary source of historical loss experience for each coverage (except the collision and comprehensive coverages by deductible) is the 1990 Ontario Loss Development Exhibits produced by the Insurance Bureau of Canada as Bulletin No. S.D. 91-17 Automobile Circular, dated November 14, 1991.

The 1990 Ontario Loss Development Exhibits contains, among other things: industrywide incurred losses (including ALAE) and reported claim counts for non-fleet private passenger automobile insurance (excluding those classified as farm use) by accident half-year, from the first half of 1983 (AY 83-1) through the first half of 1990 (AY 90-1), with losses and claim counts valued at six month intervals.

The 1990 Ontario Loss Development Exhibits contains sufficient information to determine loss development factors for each coverage that can then be used to determine the estimated ultimate incurred losses by accident half-year. In addition, because it contains claim count development information, claim count development factors can be determined and used to estimate ultimate incurred claim counts by accident half-year.

The 1990 Ontario Loss Development Exhibits contains information for collision (all deductibles combined) and for comprehensive (all deductibles combined), but not separately for the individual deductibles. Because there have been shifts over time in the distribution of exposures by deductible amount, and because these shifts would distort the analysis of long-term trends when evaluating data for all deductibles combined, we review the data by deductible, using information from 1990-1 Automobile Accident Half-Year Statistical Exhibits-Ontario, published by the IBC in January 1991 as Bulletin No. S.D. 91-04.

Because the 1990 Ontario Loss Development Exhibits does not contain earned car years, we extract earned car years by accident half-year from 1990-2 Automobile Accident Half Year: Statistical Exhibit: Ontario produced by the IBC as Bulletin No. SD 91-10 on July 10, 1991. With the earned car year information, it is then possible to compute the historical trends in claim frequencies $[(\text{estimated ultimate claim counts}) \div (\text{earned car years})]$ as well as in average claim severities $[(\text{estimated ultimate incurred losses}) \div (\text{estimated ultimate claim counts})]$.

To gain additional perspective on the historical trends in claim frequencies, claim severities, and loss costs we supplement the information from the 1991 IBC bulletins with other information from previous IBC data compilations. We were able to obtain this information for each coverage except for the individual accident benefits coverages.

In order to incorporate the claim frequencies, claim severities, and loss costs for AY 78, AY 79, and AY 80, we use information contained in the December 5, 1988 Mercer report titled Insurance Rate Proposal For Ontario Private Passenger Automobile. This provides the historical trend information for bodily injury liability, property damage, collision (all deductibles combined) and comprehensive (all deductibles combined).

In addition, we use Ontario economic data regarding Gross Domestic Product (GDP) to estimate the impact that the 1990/91 recession would have on insurance losses.

2. Determination of Estimated Ultimate Incurred Losses

Based on the IBC data, we create "loss development exhibits" for each coverage, showing the historical loss development patterns by accident half-year. These are contained in Appendix 1, Exhibit 1; a sample for bodily injury liability is included as Exhibit AR-1.

Exhibit AR-1 shows how we calculate link ratios, or loss development factors, for bodily injury liability and can be used to illustrate the general process followed for all of the coverages. The top portion of the exhibit shows, in \$000's, the "Cumulative Development at Indicated Age (in months)" for each "Accident Half-Year" from "83-1" to "90-1."

Consider Accident Half-Year 83-1, for example:

Cumulative Development at Indicated Age (in months)					
	<u>12</u>	<u>18</u>	<u>24</u>		<u>96</u>
83-1	130822	153290	175464		246427

The entry for 83-1 at 12 months is "130822"; this shows that at twelve months of maturity (i.e., at December 31, 1983 which is 12 months after the beginning of the first half of AY 83), the incurred losses (paid amounts + case reserves) are approximately \$130,822,000. Reviewing the development of 83-1, we see that the incurred losses increase to "153290" at 18 months; increase to "175464" at 24 months; and generally continue to increase to the value of "246427" at 96 months, or December 31, 1990.

The middle portion of the exhibit shows the "Age-to-Age Link Ratios" for each of the accident half-years. The "link ratios" are the ratios of the incurred losses at one "Age" to the incurred losses at the preceding "Age." Again, consider Accident Half-Year 83-1, for example:

<u>Age-to-Age Link Ratios</u>				
	<u>12:18</u>	<u>18:24</u>	<u>24:30</u>	<u>90:96</u>
83-1	1.172	1.145	1.114	1.001

For 83-1, the first value, which is labeled "12:18," is 1.172. This indicates that the ratio of the incurred losses at 18 months of maturity (153290) to the incurred losses at 12 months of maturity (130822) is 1.172, or that the incurred losses increase by 17.2% from 12 months of maturity to 18 months of maturity. Similarly, as shown, 83-1 losses increase by another 14.5% (a link ratio of 1.145) from 18 months to 24 months and continue to increase generally through 96 months of development.

The reader should note two important observations. First, as would be expected, the link ratios for any one accident half-year tend to decrease as we move to more mature periods. Second, the link ratios for a specific period of development tend to be of a similar magnitude for all accident half-years; for example, the link

ratios for the "30:36" period of development are roughly similar for all accident half-years, ranging from 1.053 to 1.095 and averaging about 1.068.

In the bottom portion of the exhibit we show "Average Link Ratios" in the first three rows and "Cumulative Link Ratios" in the last three rows. The "Average Link Ratios" are the averages over all accident half-years for each period of development. We have shown two different averages, and our "Selected" link ratios.

The first row, "Latest 6 Ex. H/L," is the average of the latest six points, excluding the high and low values; for example, for the 12:18 period of development this average, 1.129, is based on the link ratios from 87-1 through 89-2, excluding "1.099" and "1.157" from the computation of the average.

The second row, "All Periods," is computed as the average of all the data periods; for example, for the 12:18 period of development this average, 1.143, is the average of the fourteen data points from 83-1 through 89-2.

The third row, "Selected," which in this case matches the "Latest 6 Ex. H/L," represents the link ratios that we choose to estimate future development. For example, we select 1.129 for 12:18, which means that we are estimating that the incurred losses for 90-1 at 12 months of maturity will increase by 12.9% through 18 months of maturity. As another example, our selection of 1.102 for 18:24 means that we estimate that the 90-1 losses will continue to increase, by 10.2%, from 18 to 24 months of maturity, and that 89-2, which is currently valued as of 18 months, will also increase by 10.2% from 18 to 24 months of maturity. As a final example, we select 1.001 as the link ratio for 90:96; this means that we estimate that 83-2 (which is now valued as of 90 months) and all subsequent half-year periods will increase by 0.1% from 90 to 96 months of maturity.

For bodily injury liability, and for all other coverages, we assume that no material development will take place beyond 96 months of maturity.

The "Cumulative Link Ratios" represent the amount by which the incurred losses at any specific level of maturity are estimated to increase by the time they reach their ultimate, final value. For example, the "Selected" cumulative link ratio of 1.680, to develop losses from 12 months to the ultimate value, means that we estimate that reported losses for the accident half-year 90-1 will increase by 68.0% by the time all losses are settled. The "Cumulative Link Ratios" result from successive multiplication of the "Average Link Ratios," beginning with the 90:96 link ratio and moving forward through the more recent periods of development. For example, the selected cumulative link ratio for 72 months is 1.024; this is derived by multiplying the selected average link ratios for the periods 90:96, 84:90, 78:84, 72:78 ($1.024 = 1.001 \times 1.005 \times 1.013 \times 1.005$).

The method of calculating cumulative link ratios, as described in the preceding paragraphs, is applied to all of the coverages. For some coverages for which the development data exhibit less variation, we replace the calculation of average link ratios based on the "Latest 6 Ex. H/L" with link ratios based on the "Latest 6" (the average of the latest 6 points).

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The following table displays the manner in which link ratios are selected for each coverage:

<u>Coverage</u>	<u>Six Point Average</u>	<u>Six Point Average, Excluding High and Low</u>	<u>See Note</u>
bodily injury liability		Yes	
income benefits		Yes	(1)
medical benefits		Yes	(2)
death benefits	Yes		
funeral benefits		Yes	
Quebec benefits		Yes	(3)
uninsured motorist		Yes	
underinsured motorist		Yes	(4)
property damage	Yes		
collision	Yes		
comprehensive	Yes		

Note (1): For income benefits the link ratio indicated by the data is .983. However, this is based on only one data point and appears to be an anomaly. Therefore, based on professional judgment we select a link ratio of 1.000.

Note (2): For medical benefits the link ratio indicated by the data is 1.011. However, this is based on only one data point and appears to be an anomaly. Therefore, based on professional judgment we select a link ratio of 1.000.

Note (3): For Quebec benefits the link ratio indicated by the data is 1.052. However, this is based on only one data point and appears to be an anomaly. Therefore, based on professional judgment we select a link ratio of 1.000.

Note (4): Because the historical loss development data for underinsured motorist is relatively volatile, we smooth the link ratios, using an actuarial procedure called the Generalized Bondy Procedure rather than relying solely on professional judgment.

For each coverage, the selected cumulative link ratios are then multiplied by the incurred losses valued as of 12/31/90 for each six month accident period to calculate the estimated ultimate incurred losses for each accident half-year. The resulting estimated ultimate incurred losses for each accident half-year are then combined to determine the estimated ultimate incurred losses for the accident years ended 6/30, from AY 83/84 through AY 89/90. These calculations, which are self-explanatory, are contained in Appendix 1, Exhibit 3; a sample is shown as Exhibit AR-2. As shown in Exhibit AR-2, Column (8), we also calculate the link ratios that are applicable to loss development on an annual basis.

3. Determination of Estimated Historical Loss Costs

Using the information contained in IBC Bulletin No. SD 91-10, we determine the earned car years for the twelve month accident periods from AY 82/83 through AY 89/90.

For each accident year, the estimated ultimate incurred losses from Step 1 are then divided by the earned car years to derive the estimated historical loss cost for each accident year. These calculations are displayed in the loss cost trend exhibits included in Appendix 3. An example of one of these, for bodily injury liability, is included as Exhibit AR-3.

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For example, consider the values for the Accident Year Ended 6/30/90 for Columns (2), (7), (8), (9), and (10):

	<u>Exposure</u> (2)	<u>Incurred Losses At 12/90 (\$000)</u> (7)	<u>Selected Develop. Factor</u> (8)	<u>Ultimate Losses (\$000)</u> (9)	<u>Ultimate Loss Cost</u> (10)
1990	4626219	985955	1.567	1544991	\$333.96

The "Exposure," which represents the earned car years, is shown in Column (2). The "Incurred Losses at 12/90" and "Selected Develop. Factor" (which is the selected development factor for the accident year) are shown in Columns (7) and (8); their product is the "Ultimate Losses" in Column (9). The result of dividing the "Ultimate Losses" by the "Exposure" is the "Ultimate Loss Cost" shown in Column (10).

Based on professional judgment, and primarily to improve the stability of results, we use the weighted average loss cost for the two most recent accident years as the basis for our estimates. Therefore, we weight the loss cost of AY 88/89 with the loss cost of AY 89/90 using 30%/70% weights.

The choice of this weighting procedure is based on the following considerations:

- The industry loss experience contains sufficient claims to have a reasonably high statistical significance associated with the most recent two years of experience.
- Use of 30%/70% weights increases the degree to which our method is responsive to the most recent year of actual loss experience.

- The 30%/70% weights are not inconsistent with common ratemaking practices of insurers in Ontario.

The calculations and the resultant estimated historical loss costs by coverage are displayed in Exhibit AR-4.

Exhibit AR-5 is a sensitivity analysis, showing the result of using alternative weights. In addition to the 30%/70% weighting, 20%/80%, 40%/60%, and 50%/50% weights are applied. As shown, the weighted averages do not vary significantly based on the weights that are used. Using 50%/50% weights for example, instead of the 30%/70% weight, reduces the loss costs for all coverages combined by about 1%.

4. Discounting the Historical Loss Costs

In this step we discount the Estimated Historical Loss Costs to reflect the time value of money. In order to perform the discounting calculation, we need loss payment patterns (which vary by coverage) and an interest rate for discounting (which is the same for all coverages).

The loss payment patterns are based on an analysis of the paid losses for each coverage. A selected payment pattern for each coverage is based on the calculation of cumulative paid loss development factors for each coverage. The cumulative paid loss development factors are analogous to the cumulative loss development factors selected for application to the incurred losses, as discussed previously in this subsection, but are based solely on the paid loss experience.

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A simple example of a payment pattern (Column (4)) based on paid loss development factors (Column (2)) is illustrated in the following table:

Months of Maturity	Cumulative Paid Loss Development Factor	Cumulative Percentage of Losses Paid [1.000/(2)]	Incre- mental Losses Paid in Period
(1)	(2)	(3)	(4)
12	2.000	50.0%	50.0%
24	1.250	80.0	30.0
36	1.053	95.0	15.0
48	1.000	100.0	5.0

The determination of the paid loss development factors and the selected payment patterns are shown in Appendix 2.

We use a pre-tax interest rate of 8.5% for the discounting. (The use of 8.5% is discussed further in Subsection 4.)

The combination of a payment pattern for each coverage and an interest rate results in a discount factor that is used to discount the loss costs for each coverage. This is illustrated in Exhibit AR-6, for the bodily injury liability coverage. Exhibit AR-6, Column (2) shows the percentage of losses assumed to be paid in each year, starting with year 1, which represents the year in which the accidents occurred, and each year thereafter. Column (3) shows the number of years over which each payment will be discounted. Column (4) shows the discount factor that applies to each individual year of payment, where the discount factor is equal to $1.000/1.085$ raised to the power shown in Column (3). Column (5) displays the result of multiplying the percentage of losses by the discount rate. The sum of Column (5) is the overall discount factor to apply to

the losses for the coverage. A similar exhibit for each of the coverages is in Appendix 2.

The discount factor applied to each coverage and the calculation of the discounted historical loss costs are displayed in Exhibit AR-4, after the calculation of the loss costs weighted 30%/70%.

Exhibit AR-7 displays a sensitivity analysis regarding the selection of the interest rate used for discounting. Using 8.5% as the base interest rate, it displays by coverage the extent to which the discounted loss cost would have exceeded the base if a 7.0% interest rate had been used, and the extent to which the discounted loss costs would have been less than the base if a 10.0% interest rate had been used.

5. Development of Estimated Expected Loss Cost

In this step a trend factor is calculated and multiplied by the Estimated Discounted Historical Loss Cost in order to determine the Estimated Expected Loss Cost. For each coverage (and in general for any costing procedure), the trend factor is used to project loss costs from the average date underlying the experience period to the level of loss costs expected to prevail during the time that the proposed rates will be in effect.

As noted previously, the historical experience period is the weighted average (using 30/70 weights) of AY 88/89 and AY 89/90. The average accident date of AY 88/89 is assumed to be the midpoint of that period, or December 31, 1988. Similarly, the average accident date of AY 89/90 is assumed to be December 31, 1989. A 30/70 weighting of these two midpoints is September 12, 1989, the "midpoint of the experience period."

The estimated expected loss costs are those associated with rates assumed to become effective on July 1, 1992. It is assumed that these rates will be effective for a period of one year. Therefore, the "average" policy with these rates will be written to become effective on January 1, 1993. Assuming that the policies are issued with an annual term, the average loss under this policy would occur six months later, or at July 1, 1993. Thus, July 1, 1993 represents the average date of loss for policies issued with the proposed rates and is referred to, consistent with the terminology used with rate filings, as the "midpoint of the filing."

Therefore, the period of trend is from September 12, 1989 to July 1, 1993, or approximately 3.8 years.

For each coverage, the annual rate of trend is determined in two stages:

- first, annual rates of change in claim frequency and claim severity are estimated based on review of historical experience, and compounded to determine a "long-term" annual trend in loss costs;
- second, the "long-term" annual trend in loss costs is adjusted to reflect the estimated impact that the 1990/91 economic recession will have on claim frequencies.

These two stages are discussed separately in the following paragraphs.

a. Determination of "long-term" annual trend

Our selection of long-term annual trends is based on a review of the historical trends in each coverage's claim frequency, claim severity, and loss cost. For each coverage, we select long-term annual trends in claim

frequency and in claim severity, and then compound these to derive the selected long-term annual trend in loss costs.

As noted previously, the 1990 Ontario Loss Development Exhibits is used to determine estimated ultimate historical loss costs for the accident years AY 83/84 through AY 89/90 for all coverages. In addition to the incurred losses the 1990 Ontario Loss Development Exhibits also contains reported claim counts, in the same level of detail as exists for the incurred losses. These data are used to establish claim count development exhibits, as shown in Appendix 1, Exhibit 2.

We estimate ultimate incurred claim counts, by accident year, using the same procedure used to develop incurred losses to an ultimate basis, as described previously in this section. For each coverage, the link ratios for the claim count development are based on the average of the most recent six points. These calculations are shown in Appendix 1, Exhibit 2.

For each coverage, estimated ultimate incurred claim counts are divided by earned car years to determine the estimated ultimate claim frequencies. For each coverage, estimated ultimate incurred losses are divided by estimated ultimate incurred claim counts to determine the estimated ultimate claim severities.

In all cases, the data from the 1990 Ontario Loss Development Exhibits form the basis for our estimates of long-term trends. In addition to those data, however, for certain coverages we also reviewed the estimated ultimate historical claim frequencies, claim severities, and loss costs for prior periods. For each coverage, the time period that we reviewed is shown in the following table:

Experience Reviewed

	<u>Accident Years ended</u>
BI	12/31/78 - 12/31/80, 6/30/81 - 6/30/90
AB - by coverage	6/30/84 - 6/30/90
AB*	6/30/81 - 6/30/90
Uninsured Motorist	6/30/85 - 6/30/90
Underinsured Motorist	6/30/85 - 6/30/90
PD	12/31/78 - 12/31/80, 6/30/81 - 6/30/90
Coll \$100 Deductible	6/30/81 - 6/30/90
Coll \$200+ Deductible	6/30/81 - 6/30/90
Collision*	12/31/78 - 12/31/80, 6/30/81 - 6/30/90
Comp \$25 Deductible	6/30/81 - 6/30/90
Comp \$50 Deductible	6/30/81 - 6/30/90
Comprehensive*	12/31/78 - 12/31/80, 6/30/81 - 6/30/90

* All deductibles/coverages combined.

Exhibit AR-8, pages 1 through 3, displays the frequency, severity, and loss cost trend exhibits used for bodily injury liability. (Exhibit AR-8, page 3 is the same as Exhibit AR-3, used previously to illustrate the development of loss costs.)

Historical frequency, severity, and loss costs for all available accident years were reviewed in order to obtain additional perspective regarding historical loss trends in frequencies and severities. In addition, the data were reviewed on both an "as of twelve month" basis (where incurred losses and reported claim counts as of the end of an accident year are used rather than developed to represent their estimated ultimate values) and on an "ultimate" basis.

For each data set - "as of twelve months" and "ultimate" - we reviewed the rates of change calculated based on various lines of best fit and weighted averages. The five year weighted average annual changes and the annual change based on a five point exponential line of best fit are displayed on the trend exhibits.

For all coverages, the initial "default" selection is the weighted average annual percent change of the most recent 5 years. This default selection is chosen for several reasons:

- For the individual accident benefits coverages only 6 years of data are available and inclusion of 1985 would distort the data. In 1985 there seems to be some condition that caused the rate of change to balloon - perhaps the residual effects of the 1981/82 recession, tending to depress the 1984 loss year.
- Use of a five year weighted average is consistent with the methodology employed by the OAIB at the time of the 1988/1989 hearings on private passenger and commercial automobile insurance.
- Use of the five year weighted average change, as opposed to the five year fitted change, appears appropriate given the volatility of the available data.

Exceptions to the default selections are made as follows:

- For funeral benefits and death benefits claims, we use the bodily injury liability selected annual frequency trend because the calculated trends in these two coverages are contradictory. Also, for these two coverages we selected 0.0% as the annual severity trend to be consistent with the assumptions, used in the OMPP and TRA costings, that the maximum benefits are paid in all cases.
- For Quebec benefits we use 0.0% annual frequency trend because of the low credibility of the data and a 5% annual severity trend, consistent with the long-term loss cost trend in Quebec.
- For comprehensive deductibles higher than \$50, for which we do not have trend data, we assume that the annual loss cost trend will be 6.0%, which is the average of the loss cost trends selected for \$25 deductible and \$50 deductible comprehensive. The average loss cost trend of 6.0% per year for all deductibles combined is then used to trend the comprehensive loss costs on a combined basis for all deductibles.

The attached exhibit AR-9 displays the annual frequency, severity, and loss cost trends that result from our long-term trend selection process.

The sensitivity of the trended loss costs to the selected annual long-term trend can easily be determined. Since the trend period is 3.8 years, and since all of the annual trend factors (such as 1.098 for bodily injury liability) are relatively close to 1.000, a rough rule of thumb is that a 1

point change in the trend selection would result in approximately a 3.8% change in the trended loss costs.

b. Determination of Recession Adjustments

Ontario experienced a significant economic recession that lasted from the 2nd quarter of 1990 through the 1st quarter of 1991, as defined by decreases in the Ontario Gross Domestic Product (GDP). During this period, the GDP decreased for four consecutive quarters. This recession is comparable to the previous recession in Ontario:

<u>Year/Quarter</u>	<u>GDP</u>	<u>Annual Percent Change</u>	<u>Year/Quarter</u>	<u>GDP</u>	<u>Annual Percent Change</u>
1981 - 2	168,711	+8.0%	1990 - 1	232,255	+1.5%
3	168,006	-1.7%	2	230,691	-2.7%
4	166,447	-3.7%	3	228,412	-3.9%
1982 - 1	163,054	-7.9%	4	223,445	-8.4%
2	159,391	-8.7%	1991 - 1	220,015	-6.0%
3	158,808	-1.5%	2	224,081	+7.6%
4	161,553	+7.1%			

This table shows that the 1990/91 recession is similar to the 1981/82 recession:

- The 1981/82 recession had five quarters of decline in GDP; the 1990/91 recession had four quarters of decline in GDP.
- In total, the 1981/82 recession resulted in a 5.9% reduction in GDP (from 168,711 to 158,808); in total, the 1990/91 recession resulted in a 5.3% reduction in GDP (from 232,255 to 220,015).

As discussed further in this subsection, we believe the recession has had a significant impact on private passenger automobile claim frequencies and will continue to have an impact as claim frequencies recover to normal levels.

Our belief about the general nature of the impact of the recession is based on our knowledge of the impact of other recessions in Canada and the United States. Although the relationship between the economy and accident frequencies may not be known completely, we do know that a recession leads to increased unemployment and heightened financial insecurity, which typically result in reduced driving as fewer workers commute to their jobs, as employed workers reduce their driving by car pooling and use of public transportation, and as families reduce their vacations and other non-essential driving. In addition, automobile theft rates tend to increase as unemployment results in more crime.

We developed our estimates of the impact of the recession based on a comparison with the recession of 1981/82 and the corresponding claim frequencies observed at that time.

All coverages are assumed to be affected by the recession in the following manner:

- The recession began in the 2nd quarter of 1990 and lasted for four quarters.

This is demonstrated by the previous table.

- The recession affects frequencies.

The impact on frequencies is demonstrated by Ontario Highway Loss Statistics which show accidents involving personal injuries decreased 15.2% for the first eight months of 1990 compared to the first eight months of 1989, and all accidents decreased 3.8% over the same period. The industrywide trend data show the following changes in claim frequencies for AY 89/90 (which includes one quarter of experience under the 1990/91 recession) as compared to AY 88/89: -5.3%, BI; +3.6%, AB; -4.2%, PD; -2.5%, Coll.; +5.6%, Comp. The industrywide data through AY 89/90 generally show a decrease, or a moderation in the rate of increase of the claim frequencies.

The historical data are inconclusive as regarding the effect of the recession on severities.

- In terms of frequencies, the recession "hits bottom" 1.5 years after it begins.

This is based on review of Exhibit AR-10, pages 1-3, which is an analysis of the length of time that it took to "hit bottom" after the start of the 1981/82 recession. For each of the major coverage groups, the exhibit displays the actual and expected claim frequencies for the six accident years from AY 80/81 through AY 85/86, and the ratios of the actual frequencies to the expected frequencies. The expected claim frequency is the frequency determined by starting with the pre-recession frequency (the frequency for AY 80/81) and projecting it forward using the long-term rate of change noted on the exhibit. This represents our

estimate of what the claim frequency would have been had there not been a recession in 1981/82.

Review of the ratios of actual to expected frequencies that are shown in Column (4) of Exhibit AR-10 shows that, for each coverage except comprehensive, the lowest ratio occurred during AY 82/83. For comprehensive, the highest ratio occurred during AY 82/83. Assuming that the low point (high point for comprehensive) is achieved at the middle of the accident year, then this point is one and one-half years after the beginning of the recession.

- When the frequencies bottom out they equal the following proportion of what they would have been had there not been a recession (based on comparison with the 1981/82 recession):

BI:	.90
PD and Collision:	.83
AB, UM, Underinsured Mot.:	.72
Comprehensive:	1.28

These estimates are based on review of Exhibit AR-10. They represent the low points of the ratios of actual to expected claim frequencies, as explained in the following paragraphs.

The accident benefits frequency data displayed in Exhibit AR-10 include uninsured motorist claims. Therefore, we use the factor of .72 for uninsured motorist coverage as well as for the individual accident year benefit coverages.

We do not have claim frequency data for underinsured motorist for the 1981 through 1985 period, as is displayed for the other coverages in Exhibit AR-10. Therefore, we use the same factor for underinsured motorist coverage, .72, as we use for uninsured motorist coverage.

Although the comprehensive frequency ratio actually peaks at 1.56, we use 1.28 as our selection. This decision reflects consideration of the fact that the comprehensive claim frequency includes various types of claims, such as fire, flood, vandalism, and glass, that, unlike theft, do not appear to be recession related.

- The frequencies for each coverage will eventually recover to what they would have been had there been no recession; the recovery period is 5.5 years from the end of the recession for accident benefits and 4.5 years for all other coverages.

These assumptions are based on review of Exhibit AR-10 and on forecasts of Ontario growth in the GDP as compared to the actual growth in GDP that followed the 1981/82 recession.

For all coverages other than accident benefits, inspection of Exhibit AR-10 reveals that the frequencies recover to approximately the "normal" level (i.e., the ratio equals approximately 1.000) in from 3 years to 4.5 years, depending on the coverage.

Ontario economic forecasts are that the recovery from the 1990/91 recession will be much slower than recovery from the previous

recession. Ontario Economic Outlook, published in December 1991 by the Ministry of Treasury and Economics, predicts a GDP growth of 3.5% per year over the next few years, as compared to 6.0% per year in the years following the 1981/82 recession. The ratio of 6.0% to 3.5% is approximately 1.7, which suggests that the recovery from the 1990/91 recession will take 70% longer than the recovery from the 1981/82 recession. We moderate our estimate of the frequency recovery period, and estimate that the previous recession's recovery period of from 3 to 4.5 years would be increased by 50% to 4.5 to 6.75 years. We select 4.5 years as our estimate for each of the coverages except accident benefits.

The data in Exhibit AR-10 suggest that the recovery period for accident benefits frequencies is significantly longer than the recovery period for the other coverages. We add one year, and assume a recovery period for accident benefits frequencies of 5.5 years.

Based on these assumptions we adjust the long-term trend assumptions to reflect the expected impact of the recession. These adjustments are displayed in Appendix 3 and illustrated, for bodily injury liability, in Exhibit AR-11.

Exhibit AR-11 displays, under the column labeled "Accident Date," certain key dates underlying the trend analysis. The five key dates that are critical to the recession adjustment are:

- 9/12/89, which represents the mid-point of the experience period and is the starting point of the trend period

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- 5/15/90, which represents the mid-point of the quarter in which the recession began, and is the point at which the annual rate of frequency trend is assumed to have decreased
- 11/13/91, which represents the date on which the recession "hit bottom" in terms of frequencies
- 7/1/93, which represents the "mid-point of the filing" and is the point to which we are trending
- 11/12/95 (11/11/96 for the accident benefit coverages), which represents the point at which the recession-depressed claim frequencies are expected to achieve the level that they would have achieved had there been no recession.

In the exhibit, the column labeled "Annual Trend" displays the annual rates of change that are used, and the column labeled "Index" represents the indexed loss cost, based on a starting point (1.000) at the midpoint of the experience period and the annual rates of change as shown in the preceding column.

Consider the five key dates:

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
Mid-Point of Experience	9/12/89	9.8%	1.000
Start of Recession	5/15/90	2.4%	1.065
Hit Bottom	11/13/91	12.7%	1.102
Mid-Point of Filing	7/1/93		1.340
End of Recovery	11/12/95		1.780

The first annual trend that is shown, 9.8%, is the long-term loss cost trend that results from our selection of long-term frequency and severity trends.

The second annual trend shown, 2.4%, is the annual rate of change needed from 5/15/90 to 11/13/91 so that the loss cost will "hit bottom" at the level expected as represented by the index value at 11/13/91. (As explained above, we estimate that the bodily injury liability frequencies would "bottom-out" at .90 of the value that would otherwise have occurred; so the index value of 1.102 at 11/13/91 is equal to .90 times 1.224, where 1.224 is the index value that would have been achieved if the loss cost trend of 9.8% per year had applied over the full period from 9/12/89 through 11/13/91.)

The third annual trend shown, 12.7%, is the annual rate of change necessary for the loss cost index to reach 1.780 by the end of the recovery, where 1.780 is the loss cost index that would have been achieved at 11/12/95 had there been no recession and the long-term trend of 9.8% had applied throughout the entire period.

The index value of 1.340 as of 7/1/93 is the value that would have been reached at the midpoint of the filing under the assumptions stated above. The filing trend of 8.0% per year, displayed at the bottom of the exhibit, is the annual rate of change necessary to trend from 1.000 at 9/12/89 to 1.340 at 7/1/93.

Line (2) of Exhibit AR-12, pages 1 and 2, summarizes the expected loss cost trend selections after adjustment for the recession.

Exhibit AR-13, pages 1 and 2, displays a sensitivity analysis of the impact of alternative assumptions for the recession adjustment. For each coverage we vary both the number of years of the recovery and the "depth" of the recession as measured in terms of frequency. For example, for bodily injury liability, in addition to the baseline assumption that the recovery would take 4.5 years, we also show assumed recovery periods of 3.5 years and 5.5 years. Also, in addition to the baseline "depth" of the recession of .900 (meaning that frequencies will drop to .900 of what they otherwise would have been), we show assumed "depths" of .875 and .925. This results in a 3 x 3 matrix of values, which we express as percentage deviations from the baseline assumptions.

6. Inclusion of a Provision for ULAE and GST

The next step is to adjust the loss costs to include provision for ULAE and for GST. The detailed calculations of these provisions are found in Appendix 4.

a. ULAE

The ULAE provision assumptions that are applied to the Pre-OMPP product are based on information contained in IBC's Expense Allocation Program Results, hereafter referred to as the Direct Expense Report, for year 1989 (released September 11, 1990). This report, produced annually by IBC, provides calendar year expense results for leading insurers for the automobile line of business in Ontario. We rely upon the 1989 Direct Expense Report because it provides the latest available compilation of expenses under the pre-OMPP environment.

A detailed examination of ULAE is outside the scope of this study, so for purposes of our comparative product analysis we make the following assumption:

- The 1989 ULAE provision (ratio of ULAE to the sum of losses and ALAE), as reported in the 1989 Direct Expense Report, serves as a reasonable estimate of the unallocated expenses that would be incurred by the industry in PY 92/93 under the pre-OMPP product. That is, we assume that there will be neither improvement nor deterioration in the level of ULAE relative to losses and ALAE incurred by the industry from the level reported for calendar year 1989.

Based on this assumption, we estimate that Pre-OMPP ULAE would be equal to 6.7% of losses (including ALAE), and we use a ULAE factor of 1.067. The derivation of this provision is presented in Appendix 4, Exhibit 1.

b. GST

The Federal Goods and Services Tax (GST) that went into effect on January 1, 1991 is expected to affect private passenger automobile insurance costs, and therefore must be reflected in the comparative costings of the Pre-OMPP, OMPP, and TRA products. The factors we apply to adjust the loss costs for each coverage for the estimated effects of the GST are based on a study released by the IBC in August 1990. Subject to some adjustments that are described in Appendix 4, Exhibit 3, we find the IBC estimates to be reasonable and appropriate for use in this

comparative costing study. We note that in applying the GST factors, we assume that industry case reserves as of the end of 1990 did not include any recognition of cost increases in outstanding claims as a result of the GST.

Based on these assumptions, we estimate that the following factors are appropriate to adjust loss costs to include provision for GST:

bodily injury liability	
and underinsured motorist:	1.014
property damage, collision,	
comprehensive:	1.043
funeral benefits:	1.069
medical benefits:	1.009
income benefits	1.015
death benefits	1.004
Quebec benefits:	1.009

A detailed derivation of each factor can be found in Appendix 4, Exhibit 4.

Exhibit AR-12, pages 1 and 2, displays the calculation of the baseline loss costs.

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Subsection 2

Subsection 2: Coverage Adjustments

In this subsection the baseline loss costs derived in Subsection 1 (and displayed in Exhibit AR-12) are adjusted to reflect the coverage differences among the three products. The coverage adjustments are presented in the following order:

- A. generic adjustments (trend, ULAE, GST)
- B. bodily injury liability
- C. income benefits
- D. medical benefits
- E. death benefits
- F. funeral benefits
- G. Quebec benefits
- H. uninsured motorist
- I. underinsured motorist

No specific coverage adjustments are presented for the property coverages - property damage, collision and comprehensive - since the costs for these coverages in total are largely unaffected by the product changes.

We note that the loss cost estimates derived in this subsection do not represent our final estimates. In Subsection 3 we adjust the estimates derived in this subsection to incorporate information external to Ontario.

A. Generic Adjustments (trend, ULAE, GST)

The generic adjustments to the baseline loss costs reflect relatively minor product differences in certain assumptions used to determine the baseline loss costs:

1. Pre-OMPP

No adjustments to the baseline loss costs are necessary.

2. OMPP

The baseline loss costs are modified slightly for OMPP. The adjustments are as follows:

- a. The trend is modified for the medical benefits and income benefits coverages, to reflect a slight decrease in the annual rate of change in severities beginning on 6/22/90, the implementation of OMPP. This adjustment is discussed below.

The OMPP trend adjustment is calculated to reflect the fact that medical benefits and income benefits trends appear to be lower in a pure first party environment. Exhibit AR-14 shows the long-term accident benefits annual trend for Quebec, which has a pure first party system, and for Ontario medical benefits and income benefits combined. As shown, the Quebec trend is 10.2% less than the Ontario trend. We recognize that the Quebec road safety programs are apt to be responsible for some of this difference, and assume that the safety programs are responsible for one-half of the difference, or 5.1%; we assume that the remaining 5.1% difference is due to coverage differences, and that some of this 5.1% reduction due to coverage differences will occur in Ontario, also, under OMPP. We assume that one-fourth of this reduction, or 1.3%, will occur in Ontario.

(Over the period 1984 through 1990, the period that is comparable to the period of trend used for the medical and income benefits coverages, the annual rate of change in Quebec is approximately 0.7%, suggesting a total difference of about 14.5% rather than 10.2%. However, due to the fact that the Quebec data are somewhat erratic over the period, we have chosen the actual long-term trend over the 13 year period 1978-1990, 5.0%, rather than 0.7% as the Quebec annual trend.)

Appendix 3 displays, for each coverage, the adjustments to the long-term trend based on the combined impact of the recession and OMPP. These adjustments are illustrated by Exhibit AR-15, which shows the calculations for income benefits trend. The calculations in Exhibit AR-15 are almost identical in nature to those discussed for Exhibit AR-11, which show the recession adjustment for bodily injury liability. The only difference is that at 6/22/90 the annual trend is reduced slightly to reflect the reduction due to OMPP, as discussed in the preceding paragraph.

- b. The ULAE factor is revised to 1.076.

Based on the results contained in the 1990 Direct Expense Report which reflect, in part, the OMPP environment, we revise the ULAE factor to 1.076. The derivation of this factor is presented in Appendix 4, Exhibit 2.

We note that ULAE is allocated to coverage on a percent of loss (and ALAE) basis. As a result, as the composition of loss costs changes, this allocation of ULAE expenses can create some anomalies - such as is the case with the property damage, collision, and comprehensive coverages. We assume that these coverages are largely unaffected by the change in

products (other than for some trend adjustments); yet, the application of a higher ULAE provision under OMPP and TRA results in a slight increase in the loss costs for these coverages. However, the impact is small, and to treat ULAE otherwise would require an allocation of ULAE by coverage, which is beyond the scope of this study. Therefore, our loss costs are presented with this minor discrepancy, and the reader is so advised.

- c. The GST provisions for death benefits and income benefits are modified slightly as a result of basing the calculation on the 1990 Direct Expense Report and on the expected distribution of goods and services purchased to pay the claims of these coverages under OMPP. These calculations are displayed in Appendix 4, Exhibit 5.

Exhibit AR-16, pages 1 and 2, displays the calculation of the adjusted baseline loss costs, modified for the OMPP differences identified above.

3. TRA

The baseline loss costs are modified for TRA in the same way as they are for OMPP, except that the trend is revised further to include two estimated impacts of implementing TRA on July 1, 1992; and there is a slight adjustment to the GST factor for bodily injury liability and underinsured motorist.

As discussed above, the long-term trends for medical benefits and income benefits appear to be about 10.2% less under a pure first party system, and half of this difference, or 5.1% is expected to relate to coverage differences. We assume that one-quarter of this difference took effect with the introduction of OMPP. We assume that another quarter of this difference will take effect with the introduction of TRA.

Further, also as noted under our discussion of the OMPP baseline loss costs, we expect that about half of the difference in loss cost trend, or 5.1%, is attributable to improved safety programs in Quebec, which reduce accident frequencies. We assume that under TRA the result of the intended safety programs will begin to have an impact after January 1, 1993, and assume that the trend for all coverages except comprehensive will be affected by a reduction of 5.1% per year.

The assumption that the full amount of the safety impact of 5.1% per year will be realized beginning on January 1, 1993 is based on the following considerations:

- We adjust the annual trend for a period of four to five years. In Quebec, the substantially reduced rate of change is calculated over a 13 year period rather than a four to five year period. Thus, the estimated reduction in Ontario appears modest compared to what may have actually occurred in Quebec.
- We expect that the most significant impact from improved safety programs may occur in the earlier years. Thus, to the extent that the Quebec data suggest that there may be a long-term trend reduction of approximately 5% per year due to improved safety programs, the actual reduction in the first few years may well be in excess of 5% per year.
- We note that there appears to be significant opportunity for improved safety. For example, according to The Road Ahead, 21% of Ontario drivers and passengers do not wear seat belts, compared to a national average of 15% and a Quebec figure of 8%; and two-thirds of vehicle fatalities are for persons not wearing seat belts.

Thus, increasing the use of seat belts in Ontario to the national average would reduce the number of unbelted drivers and passengers by almost one-third, and could result in a significant reduction of fatalities and serious injuries. This is a change that, theoretically, could be brought about in relatively short time by a public campaign to promote the value of seat belts.

- Although our study is based on the assumption that TRA will become effective on July 1, 1992, we assume a delay in the impact of the safety programs until January 1, 1993. The Road Ahead has announced that there is an intention to introduce, in 1992, legislation establishing the Road Safety Agency. Therefore, we believe there will be some delay beyond July 1, 1992, before the full impact of the improved safety efforts can be realized.

Following is a rough guide to the sensitivity of the estimated average (over all coverages) annual trend factor to the assumptions regarding the safety programs:

- Low: - 1.2%
(July 1, 1992 start date;
7.5% per year impact)
- Baseline: Baseline
(January 1, 1993 start date;
5.1% per year impact)
- High: + 0.5%
(July 1, 1993 start date;
2.5% per year impact)

Appendix 3 shows the adjustments to the long-term trend assumed for TRA. These adjustments are illustrated by Exhibit AR-17, which shows the calculations for income benefits trend. The calculations in Exhibit AR-17 are almost identical to those that are discussed for Exhibit AR-15, which show the OMPP adjustment for income benefits. The only difference is that at 7/1/92 the annual trend is reduced slightly to reflect the slight reduction due to coverage differences under TRA, and reduced slightly again on 1/1/93 to reflect the implementation of safety programs planned under TRA.

Exhibit AR-18, pages 1 and 2, displays the calculation of the adjusted baseline loss costs, modified for the TRA differences identified above.

B. Bodily Injury Liability

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$347.48 (Exhibit AR-12)
OMPP	\$350.41 (Exhibit AR-16)
TRA	\$342.39 (Exhibit AR-18)

2. Discussion

a. Overview of Methodology

In general, our approach in estimating the impact of the OMPP and TRA products on bodily injury loss costs for PY 92/93 is to subject, after certain adjustments, the claims in the Osborne Inquiry bodily injury liability claim database (Osborne Inquiry database), which were settled under the full tort Pre-OMPP environment, to the tort environment defined by the OMPP and TRA products.

In the case of OMPP, summary information contained in the Osborne Inquiry database is reviewed for each of the 1,394 claimants in the Osborne Inquiry database to assess, on a claimant by claimant basis, the percentage of claimants making claims that would be expected to pass the OMPP verbal threshold, and the percentage of losses arising from those claims. In the case of TRA, the percent of bodily injury liability losses that would be expected to remain within the tort system under TRA is estimated by examining the reported losses for each of the 1,394 claimants, and determining, on a claimant by claimant basis, the portion of all non-economic losses excluding FLA claims in excess of \$15,000 (indexed), and the portion of all non-economic losses subject to FLA in excess of \$5,000 (indexed).

b. Terminology

- i The terms "claim" and "claimant" have different meanings within the Osborne Inquiry report and we use those meanings in this subsection of our report. As defined in the Osborne Inquiry report:

"a claim is a file in which one or more claimants have received or will receive payments from the insurance company reporting the data";

"a claimant is a person who has either received or will receive payment from the insurance company reporting the data."

Within the Osborne Inquiry database there are 1,394 claimants as defined in the Osborne Inquiry report.

We also note, as pointed out in the Osborne Inquiry report, that the IBC defines a claim differently in its statistical plan, and does not define the term claimant. As an illustration of the difference in definitions, we use the following example.

Assume driver A causes an accident in which the following are injured:

B, a passenger in A's car

C, the driver of the other vehicle

D, a passenger in C's car

E, a passenger in C's car

Assuming B, C, D, and E all file to recover damages from A's insurer, under the IBC definition of the term "claim," there would be two bodily injury claims: one for B, and one for C/D/E. Under the Osborne Inquiry definition of the term "claim," (and the one used in this subsection) there would be one claim: for B/C/D/E. Under the Osborne Inquiry definition of "claimant," (and the one used in this subsection) there would be four bodily injury claimants: B, C, D, and E.

There is one other point regarding the definitions of "claim" and "claimant" of which the reader must be aware. Although the Osborne Inquiry report defines "claimant" as any person receiving payment for damages suffered, the report does not extend this definition to those recovering damages under FLA. To illustrate, assume that in our example above, C's spouse and C's son file for damages against A under FLA. In the Osborne Inquiry database, these actions are considered to be within "claimant" C's action. That is, C's spouse and son are not considered to be separate "claimants," although according to the manner in which the term "claimant" is defined in the report, C's spouse and son should each be considered as an additional claimant. We make this point because under TRA, C's spouse and son would each be considered a claimant, and the \$5,000 FLA deductible would apply to each action. In deriving our cost estimates, we treat each individual bringing action as a separate claimant.

- ii FLA claims refer to those claims brought under the Family Law Act by a person's spouse, children, grandchildren, parents, grandparents, brothers or sisters for economic and non-economic

(the loss of guidance, care, and companionship) damages suffered as a result of injury or death of that person.

- iii Prejudgment interest refers to that portion of the loss settlement/award for interest on accrued damages.
- iv Party and party costs refer to that portion of the loss settlement/award for the costs of the plaintiff's attorney.
- v Economic loss refers to that portion of the loss settlement/award for past employment income, past out-of-pocket expense, future employment income, or future care expense. In this subsection we also use the term economic loss to refer to 1) that portion of the FLA settlement/award that is economic in nature; 2) that portion of prejudgment interest that is attributed to economic loss; and 3) that portion of party and party costs that is attributed to economic loss.
- vi Non-economic loss refers to the portion of the loss settlement for all other types of damages, principally for pain and suffering. In this subsection we also use the term non-economic to refer to 1) that portion of the FLA settlement/award that is non-economic in nature; 2) that portion of prejudgment interest that is attributed to non-economic loss; and 3) that portion of party and party costs that is attributed to non-economic loss.

c. Use of the Osborne Inquiry Database

Briefly, the Osborne Inquiry bodily injury liability claim database represents the results of a bodily injury liability claim survey conducted

for the Osborne Inquiry. The database includes, among other things, detailed cost (pure losses, i.e., excluding ALAE) information on 1,394 representative Ontario private passenger automobile bodily injury claimants (as defined in the study), with claim settlement dates predominately in 1986, as reported by nine insurers.

There are limitations to the bodily injury database: it is a sample and hence subject to sampling error; the survey is somewhat dated; and, as would be the case for any survey of this nature, it relies upon the judgment of the companies as to how loss payments are allocated by category of damage. However, based on the degree to which it has been referenced by the Government (in the Osborne Inquiry report) and insurers (in supporting their initial and subsequent rate filings under OMPP), it represents, in our view, the most readily available, generally accepted, and appropriate source of the type of information needed to assess the impact of OMPP and TRA in the province of Ontario. We rely almost exclusively on the Osborne Inquiry database to derive our bodily injury liability, uninsured motorist, and underinsured motorist comparative cost estimates.

d. Adjustments to the Database

i Since economic and non-economic losses are treated differently under TRA, it is necessary to allocate certain of the losses reported in the database between economic and non-economic categories of loss. We do so in the following manner:

- FLA - Fifty percent of all FLA awards/settlements associated with death cases are assumed to be economic, and fifty percent are assumed to be non-economic. This

allocation is judgmentally based on: 1) the Osborne Inquiry, in which it was stated, "In fatal accident cases it seems reasonable to conclude that pecuniary loss compensation exceeds compensation paid for guidance, care and companionship, at least in cases where the deceased was an income earner." (Volume I, page 389); 2) a review of fatal injury case judgments in Canada, and 3) consideration of the proportion of deaths involving income earners. Based on those same considerations, we assume that 90 percent of all FLA losses associated with non-death cases are non-economic in nature.

We show later in this subsection the sensitivity of our cost estimates to these assumptions by showing what the cost estimates would be under two extreme alternative assumptions: 1) that all FLA awards/settlements are economic; 2) that all FLA awards/settlements are non-economic.

- Party and Party - Party and party costs are allocated proportionately (as a percent of awards/settlements) between economic and non-economic damage categories. (See Appendix 5, Exhibit 1 for a description of the allocation process.)
- Prejudgment Interest - Prejudgment interest costs are allocated between economic and non-economic awards/settlements on a claimant by claimant basis. Concurrently, also on a claimant by claimant basis, we

reflect the effects of the change in the manner in which prejudgment interest is currently determined, i.e., determining prejudgment interest on non-economic losses at a discount rate of 5%. (See Appendix 5, Exhibit 1 for a description of the allocation process.)

- ii As mentioned above, one of the limitations of the Osborne Inquiry database is that the claims included in the survey were predominantly closed in 1986, and therefore do not reflect the cost conditions that will exist during PY 92/93. Therefore, before subjecting the claims to the assumed OMPP and TRA environments, we trend the reported losses in an attempt to reflect PY 92/93 cost conditions.

We do so in several steps. First, we trend each of the reported loss amounts for each claimant in the database at a rate of 8.8% per year. The 8.8% trend rate represents the long-term trend rate for bodily injury liability severity selected previously (Exhibit AR-9). The losses are trended from the date of occurrence to July 1, 1993, the assumed mid-point of the PY 92/93 experience period. The trended loss amounts are then totaled.

We then trend the individual claim amounts again, but this time we subject the trended losses to two caps:

- One cap is the policy limit applicable to the claim. In determining this cap we group all claimants by claim before applying trend, since all claimants within a claim are subject to the same policy limit.

Also, to recognize the fact that average policy limits of liability coverage carried by insureds in Ontario have increased since the early 1980's we trend each policy limit as well. We trend the policy limits at an annual rate of 4%, a rate that we derived from reviewing the policy limit distribution contained in the 1989 and 1988 Actual Loss Ratio Exhibit published by IBC.

We note that in trending the policy limits, we (judgmentally) do not raise any policy limit over \$1 million.

- All non-economic losses, excluding those arising from FLA claims, are subjected to the cap (1978 Supreme Court decision) that exists in Ontario. We determine this cap on a claim by claim basis by applying changes in the CPI since 1978 to the \$100,000 initial cap. We note that because the cap applies on a settlement date basis, we extend the indexed \$100,000 cap beyond 1992 at an annual rate of 4.5% - consistent with the long-term change in the CPI we assume in costing the accident benefits coverages.

In total, we limit four claims in the database because the trended losses exceed the trended policy limit. Of the four, two claims are also limited as a result of the non-economic loss cap. The amount of losses that exceed the caps are assumed to be evenly distributed among the types of damages.

Once we limit all losses to these two caps, we iteratively trend the individual claim amounts in the database at higher and higher annual trend rates until the total amount of trended and capped losses match the total we achieve when trending at 8.8% per year without any caps. We do this to achieve an operational constraint we imposed: that the sum of the trended, capped losses must equal the sum of the uncapped losses trended at 8.8% per year. The process produces a rate of 9.3%.

We recognize that we did not factor into the capping process any provision for possible property damage claim amounts arising from the same claims that would also be subject to the policy limit cap. However, property damage claim amounts are not captured in the database, and we do not feel that their omission materially affects our cost estimates.

The trend (and type of damage) adjustments to the bodily injury liability losses in the database result in the following breakdown by type of damage:

Economic

pure loss	28.3%
FLA	1.5%
party and party	3.9%
prejudgment interest	3.0%
Total Economic	36.7%

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Non-economic

pure loss	47.5%
FLA	3.2%
party and party	8.0%
prejudgment interest	4.6%
Total Non-economic	63.3%

(Estimated comparative breakdowns under OMPP and TRA environment are presented in Exhibit AR-19.)

We note that in applying this method to adjust losses to the PY 92/93 cost level, we are making the assumption that all claims (save those few claims that are subject to the caps) trend at the same rate. That is, we have assumed, for example, that small claims trend at the same rate as large claims, and that economic losses trend at the same rate as non-economic losses, etc. This assumption is a key assumption in our comparative costing of the bodily injury liability coverage. In the absence of relevant data, it is our professional opinion that this is a reasonable assumption. We do, though, recognize the significance of this assumption, and therefore show later in this subsection how alternate assumptions affect the cost estimates for OMPP and TRA.

We also recognize that we do not explicitly consider the possible impact of, according to the Osborne Inquiry, "two recent developments, one procedural, the other substantive, which should reduce both the number of FLA claimants and the amount of awards for loss of guidance, care and companionship" (Volume I, Page 390). Those two developments are the

elimination of the prohibition against bringing more than one action in respect of the same occurrence, and the *Nielson v. Kaufmann*, and *Reidy v. McLeod* decisions, which, according to the Osborne Inquiry, should "moderate" the size of FLA awards. Later in this subsection we show how moderating the assumed trend in FLA claims affects the cost estimate for TRA.

e. Costing OMPP

Bodily injury loss costs are affected by OMPP in four ways:

- i The verbal threshold permits tort access only for personal injuries resulting in death, or permanent serious disfigurement, or permanent serious impairment of an important bodily function caused by continuing injury which is physical in nature. Therefore, a number of individuals injured in automobile accidents who are able to sue under the Pre-OMPP environment would not have access to the tort system under OMPP. As a result, the number of claims filed and dollars of losses paid under the bodily injury liability coverage should be reduced under OMPP as compared to Pre-OMPP. We refer to this as the "effect of the OMPP threshold."
- ii Since accident benefit recoveries are offset against bodily injury liability awards/settlements, the enhancement of the accident benefits coverages under OMPP should serve to reduce the bodily injury liability awards that otherwise would have been paid on those claims that pass the OMPP threshold. We refer to this as the "effect of accident benefits offset."

- iii With the elimination of the collateral source rule, recoveries from collateral sources would be subtracted from the bodily injury liability awards/settlements that otherwise would have been paid on those claims that pass the OMPP threshold. We refer to this as the "effect of the collateral source rule."
- iv The smaller and more quickly settled tort claims will tend to be the bodily injury liability claims that would be eliminated under OMPP. As a result, the length of time it will take for the average bodily injury liability claim to settle should increase under OMPP. Therefore, discounting will have a relatively greater effect under OMPP than under Pre-OMPP, and should serve to otherwise reduce the discounted value of bodily injury loss costs under OMPP. We refer to this as the "effect of settlement period."

We discuss the manner in which we treat each of these effects in the following sections.

"Effect of the OMPP Threshold"

To estimate the effect of the OMPP threshold on bodily injury costs, we asked two Ontario based claim adjusting firms and two Ontario based law firms - one representing plaintiff counsel and one representing defense counsel - to determine, in their view, which of the claimants in the Osborne Inquiry database would pass the OMPP verbal threshold. The four claim experts were provided with summary information on each of the 1,394 claimants (not considering FLA claimants as separate claimants) in the database as follows:

- a description of the injury (e.g., neck soft tissue injury, arm fracture, back vertebrae/ disk fracture, etc.)
- the number of days the injured claimant was reported to be disabled
- the degree of fault of the claimant
- the dollar amount of the settlement (trended to 1992 cost levels).

Based on this information, each of the four survey participants indicated which of the claimants would, in their opinion, pass the OMPP verbal threshold. The summary results of the survey are displayed in the following chart.

Category	Participant				Consensus
	A	B	C	D	
<u>Passing Threshold</u>					
% Claimants	5.8%	5.2%	4.9%	7.2%	5.8%
% Losses	21.4%	41.6%	41.5%	50.4%	38.7%

(We note that these loss penetration percentages reflect all of the adjustments described previously, including the adjustment to reflect the change in the manner in which plaintiff interest is computed.)

We base our comparative cost estimates on the consensus, which we derive as follows. If all four participants agree that a claimant would pass the threshold then the claimant is assigned a value of 1. If three of the four agree then the claimant is assigned a value of .75, etc. In those few

instances where a participant could not decide whether or not a claimant would pass the threshold, then that participant's response for that claimant is treated as half of an affirmative response.

As is indicated from the survey results presented in the prior chart, there is some degree of variation in the opinions of the four experts as to the effects of the OMPP threshold. This is not unexpected given the uncertainty surrounding how the courts will interpret the verbal threshold, and the uncertainty surrounding how insurers will deal with "borderline" claims. And it will be some time, as cases are adjudicated, challenges to the law are resolved, legal precedents are set, etc. before the effects of OMPP can be fully known. Therefore, our estimate of the impact of the verbal threshold should be viewed as being a "consensus" estimate that is subject to a degree of uncertainty.

To provide some indication of the potential impact of the uncertainty, we note that if we only consider those claimants in which there is complete agreement among the participants that a claimant would pass the threshold, the claimant and loss penetration levels would be 2.7% and 20.9%, respectively. If we fully count those claimants in which at least one of the four participants believes the claimant would pass the threshold, the claimant and loss penetration levels would be 11.8% and 57.6%, respectively. Later in this subsection we show how changing the assumed effect of the OMPP threshold (38.7% loss penetration) to 20.9% and 57.6% affects the cost estimate for OMPP.

In deriving our estimate of the "effect of the OMPP threshold," we assume that ALAE associated with bodily injury liability losses will be reduced to the same degree as bodily injury liability awards/settlements

are reduced. The manner in which we proportionately allocate party and party costs between economic and non-economic damages is consistent with this assumption. However, we recognize the possibility that ALAE costs may not be directly proportional to award/settlement amounts, and that the "effect of the OMPP threshold" could be somewhat more or less than we have estimated. Later in this subsection we show how alternate assumptions about LAE (ALAE and ULE combined) affect the cost estimate.

"Effect of Accident Benefits Offset"

The amount of bodily injury liability damages awarded to a claimant is reduced by the amount the claimant recovers under the accident benefits coverage. Therefore, the enhancement in the accident benefits coverage under OMPP represents a reduction in the bodily injury liability losses relative to those paid under Pre-OMPP.

To estimate the effects that the enhancement in accident benefits (from Pre-OMPP to OMPP) has on bodily injury costs under OMPP, we apply a method used in a paper entitled, "Pricing Threshold No-Fault Automobile Insurance in Canada," presented at the 1991 Discussion Paper Program of the Casualty Actuarial Society. We assume that for those claimants who pass the OMPP verbal threshold, every dollar increase in the accident benefits loss cost (which is a measure of the increase in benefits) serves to reduce the bodily injury liability loss cost by one dollar. That is, to take a simple example for illustrative purposes, if as a result of the increase in the income benefits provisions under OMPP the cost of the coverage is estimated to increase by an average of \$10, then we would expect there would be a commensurate decrease in the average

bodily injury liability award/settlement and hence a reduction in the cost for bodily injury liability of \$10.

In applying this "one-for-one" offset assumption to estimate the cost impact on bodily injury liability costs, two adjustments are made. First, we adjust the estimated increase in the accident benefits loss cost to recognize that some of the accident benefits cost increase is attributed to accident benefits payments made to individuals that will be unable to sue under OMPP, either because they are at-fault or because their injuries do not meet the OMPP threshold.

Second, we pro-rate the full accident benefits offset among the bodily injury liability, uninsured motorist, and underinsured motorist coverages.

The calculations applied to derive the accident benefits offset are presented in Appendix 5, Exhibit 2.

"Effect of the Collateral Source Rule"

Prior to OMPP, collateral benefits were not recognized in determining damages for loss of earnings or earning capacity in personal injury cases (Osborne Inquiry, Volume I, Page 428). This rule, known as the collateral source rule, is eliminated under the Insurance Act. As a result, under OMPP, bodily injury liability awards are reduced by payments received by claimants from, for example, employer sponsored or private income replacement plans.

To estimate the cost impact of the elimination of the collateral source rule on bodily injury liability costs, we rely on the results of the second bodily

injury survey conducted for the Osborne Inquiry (conducted specifically to estimate the effect of the collateral source rule). These results show that bodily injury liability awards/settlements for past income losses would be reduced by 19% and awards/settlements for future income losses would be reduced by 6%. Absent more recent data, we assume these percentages apply for PY 92/93. We therefore reduce, by these percentages, the bodily injury liability costs we estimate to be associated with past and future income losses.

"Effect of Settlement Period"

Based on our analysis of the claims in the Osborne Inquiry database and of those database claims we assume will meet the OMPP threshold, we estimate that, on average, OMPP claims will take about 8 months longer to settle than Pre-OMPP claims. We derive this estimate by calculating the average settlement period for claims that we expect will penetrate the verbal threshold and comparing it to the average settlement period for all claims in the database. The reason for the longer average settlement period is that many of the smaller, more quickly settled claims that existed under Pre-OMPP are not expected to meet the OMPP threshold.

The results of these adjustments to the bodily injury liability baseline loss cost for OMPP are as follows.

Baseline loss cost, adjusted for OMPP	+ \$350.41
Adjustment for OMPP threshold (including change in prejudgment interest rule)	- \$210.52
Adjustment for accident benefits offset	- \$ 16.94
Adjustment for collateral source rule	- \$ 3.98
Adjustment for settlement period	- \$ 6.55
Estimated OMPP bodily injury liability loss cost	= \$112.42

(Note, the magnitude of the above adjustments varies somewhat depending upon the order of determination.)

The calculations we perform to derive the estimated OMPP bodily injury liability loss cost of \$112.42 are presented in Appendix 5, Exhibit 2.

f. Costing TRA

As compared to OMPP, access to tort is expanded under TRA to include recoveries for non-economic damages. As a result, the number of claims filed should significantly increase under TRA as compared to OMPP.

Our costing of the TRA product is based on Pre-OMPP loss experience because of the absence of credible OMPP or TRA loss experience. As compared to Pre-OMPP:

- i Tort access is available for non-economic damages, subject to either an indexed \$15,000 deductible, or in the case of FLA claims, to an indexed \$5,000 deductible. As a result, the number of claims filed and dollars of losses paid under the bodily injury liability coverage should be less under TRA as compared to Pre-OMPP. We refer to this as the "effect of the TRA deductible."
- ii As compared to Pre-OMPP, many of the smaller and more quickly settled bodily injury liability claims should tend to be eliminated under TRA. As a result, the length of time it will take for the average bodily injury liability claim to settle should be longer under TRA. Therefore, discounting will have a relatively greater effect under TRA than under Pre-OMPP, and should serve to otherwise reduce the discounted value of bodily injury liability loss costs under TRA. We refer to this as the "effect of settlement period."

Note that we assume that accident benefit recoveries, which are predominantly economic in nature, will not be offset against non-economic awards under TRA. Hence, unlike OMPP, there is no accident benefits offset under TRA. We also assume that the elimination of the collateral source rule will have no cost impact on TRA as compared to Pre-OMPP.

We discuss the manner in which we treat each of the two effects in the following sections.

"Effect of the TRA Deductible"

To estimate the impact of the TRA deductible on bodily injury liability costs (as compared to Pre-OMPP), we again rely upon the Osborne Inquiry database. We begin with the database claimant results, adjusted to reflect the assumed changes in cost conditions described earlier under "Adjustments Made to the Database." We then eliminate all economic losses, including their assumed proportionate share of the FLA loss amounts, prejudgment interest, and party and party costs. Then, in those four cases in which we cap the loss recovery at the policy limits (proportionately by type of damage), we add back the non-economic losses that are removed when we subject the loss amount to the policy limit. We do this under the assumption that the elimination of economic losses will allow the full policy limit (except that which applies to property damage losses) to apply to non-economic losses. (Hence, in those cases where the policy limit serves as a cap on Pre-OMPP tort awards, potentially more dollars of non-economic losses will be paid out under TRA.) We note that we continue to subject the non-economic losses to the Supreme Court indexed cap.

Then, on a claimant by claimant basis, we subject the non-economic settlement amounts, including prejudgment interest and party and party costs, to the \$15,000 and \$5,000 deductibles. In so doing, we index the deductibles at rate of 4.5% per year to correspond to the estimated year of claim settlement; and the indexed deductibles are applied on a claimant by claimant basis. In other words, we subtract from all non-economic settlement amounts either \$15,000 per claimant or \$5,000 per claimant for FLA claims.

Taking the example we cited earlier:

Assume driver A causes an accident in which the following are injured:

- B, a passenger in A's car
- C, the driver of the other vehicle
- D, a passenger in C's car
- E, a passenger in C's car

Further, assume the following non-economic damages are paid out under Pre-OMPP:

- B \$ 5,000 for non-economic damage
- C \$10,000 for non-economic damage
- D \$18,000 for non-economic damage
- E \$50,000 for non-economic damage

Also, assume that F and G, the children of E, each receive \$7,500 under FLA actions they each file against A.

Assuming there is no prejudgment interest, no party and party costs, and that settlement occurs in 1992, then under TRA,

- B and C would receive nothing as their damages fall below \$15,000
- D would receive \$3,000 (\$18,000 less the \$15,000 deductible)
- E would receive \$35,000 (\$50,000 less the \$15,000 deductible)
- F and G would each receive \$2,500 (\$7,500 less the \$5,000 deductible)

We note that the database categorizes the FLA claimants by type of claimant (i.e., spouse, children, relative), and that in applying the FLA deductible to the award/settlement amounts, we assume the following number of claimants per category of FLA claim: the type of claimant category "spouse" represents one claimant; the type of claimant category "children" represents two claimants; and the type of claimant category "relatives" represents two claimants.

The result of the application of the TRA deductibles to the Osborne database is:

% of Pre-OMPP claimants with award/settlement amounts exceeding the deductible	18.1%
% of Pre-OMPP award/settlement amounts that exceed the deductible	28.4%

(We note that this loss penetration percentage reflects the change in the manner in which prejudgment interest is computed. Also, the percentage of claimants passing refers to the base of 1,394 claimants in the Osborne Inquiry database.)

These percentages serve as the basis for our comparative costing of the TRA product.

Additional Deductible Considerations

- We note that in estimating the impact of the TRA monetary deductible, we do not adjust the indicated claim or loss penetration level for either "claim non-pursuance" or "deductible erosion."

"Claim non-pursuance" refers to the possibility that the deductible will serve to reduce the number of claims just exceeding \$15,000 (or \$5,000 for FLA) because claimants will view the costs of tort action as outweighing the possible awards that might be received. For example, the claimant with \$18,000 in non-economic damages may choose not to pursue a tort claim given the award would only be \$3,000. Claim non-pursuance also extends to the idea that expanded economic benefits (such as exist under TRA) may reduce the pursuit of non-economic tort claims.

"Deductible erosion" refers to the possibility of the deductible becoming what the Osborne Inquiry referred to as an "inverse target." That is, claimants may exaggerate their injury as a means to make up for all or part of the applicable deductible. We note a similar, but not directly applicable experience with monetary dollar thresholds in the U.S. That experience has generally shown that as a result of "claim padding" anticipated cost savings are not fully realized under a different kind of monetary threshold plan, where the full access to tort is permitted if the monetary threshold (e.g., \$2,500 in medical costs) is met.

We note however, that this type of monetary threshold is quite different and, we believe, less effective than the TRA deductible

approach. To illustrate, under a \$15,000 monetary dollar threshold, a claimant with \$13,000 in damages would collect \$15,000 by "padding" his damages by \$2,000; and would receive \$16,000, by padding the damages by \$3,000. Under the TRA deductible, that same claimant would receive nothing by "padding" his claim by \$2,000, and only \$1,000 by padding his claim by \$3,000. So the incentive for "claim padding" is much less under the TRA deductible than under a monetary threshold.

"Deductible erosion" also extends to the concept, discussed in the Osborne Inquiry report, of "judicial generosity." "Judicial generosity" refers to the possibility that courts will award victims otherwise larger amounts for non-economic damages to make up for all or part of the applicable deductible. It is also possible that courts may consider the enhanced first party economic benefits received by claimants under TRA and as a result award otherwise smaller amounts for non-economic damages.

As is the case under OMPP, we believe that only over a period of time will the effects of the type of monetary deductible contemplated under TRA be known. In our opinion, strong arguments can be made that the monetary deductible may be more cost effective than anticipated; and equally strong arguments can be made that, over time, the effect of the deductible will be reduced through erosion. Therefore, we have not made any adjustment for possible deductible erosion, nor do we assume any degree of claim non-pursuance in our cost estimates for PY 92/93.

Later in this subsection we provide sensitivity analysis of this issue and show TRA cost estimates assuming the effect of the monetary deductible is increased by 10% and reduced by 10%.

- Consistent with our assumption for OMPP, we assume that the effect of the monetary deductible on ALAE is the same as the assumed effect of the deductible on award/settlement amounts. Later in this subsection we show how alternate assumptions about LAE affect the cost estimate.

"Effect of Settlement Period"

Based on an analysis we performed of the claims in the Osborne database and of those database claims we assume will exceed the TRA deductible, we estimate that, on average, TRA claims will take about 8 months longer to settle than Pre-OMPP claims. We derive this estimate by calculating the average settlement period for claims that we expect will exceed the monetary deductible and comparing it to the average settlement period for all claims in the database. The reason for the longer average settlement period is that many of the smaller, more quickly settled claims that existed under Pre-OMPP will not meet the TRA deductible. This estimate assumes, for example, that a Pre-OMPP claim involving both economic and non-economic damages that took four years to settle (from date of accident) would take the same four years to settle under TRA. This assumption is consistent with the manner (i.e., proportional to award/settlement amounts) in which we treat ALAE and party and party costs. If it is the case that claims involving only non-economic damages (TRA) are more quickly settled than those involving both economic and non-economic damages (Pre-OMPP), then the "effect of settlement period"

would be reduced. However, this would imply that ALAE and party and party costs may be relatively lower for non-economic only claims than for claims involving both non-economic and economic damages than we have assumed; thus a reduction in our ALAE cost estimate may be required under this assumption.

The result of these adjustments to the adjusted bodily injury liability baseline loss cost for the effects of TRA are as follows.

Baseline TRA loss cost	+ \$342.39
Adjustment for TRA deductible (including change in prejudgment interest rule)	- \$240.25
Adjustment for Settlement Period	- \$ 4.85
TRA Bodily Injury Loss Cost	= \$ 97.29

The calculations we perform to derive the estimated TRA bodily injury liability loss cost of \$97.29 are presented in Appendix 5, Exhibit 3.

3. Sensitivity Analysis

As an indication of the sensitivity of our cost estimates to our assumptions, we provide cost estimates under alternative assumptions:

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	<u>OMPP</u>	<u>TRA</u>
Estimated Loss Costs (Base)	\$112.42	\$ 97.29
Estimated Loss Costs <u>Under Alternate Assumptions</u>		
a 100% of FLA claims are considered non-economic	-	\$ 97.61
b 100% of FLA claims are considered economic	-	\$ 95.70
b1 Non-economic losses are trended at 10.8% per year and economic losses are trended at 6.3% per year (instead of trending each at 9.3% per year)	\$107.75	\$120.54
b2 Non-economic losses are trended at 7.8% per year and economic losses are trended at 11.1% per year	\$115.17	\$ 78.50
c1 FLA losses are trended at 4.5% per year	-	\$ 98.57
d1 Effect of TRA deductible is increased by 10%	-	\$ 75.00
d2 Effect of TRA deductible is reduced by 10%	-	\$120.86
e1 OMPP threshold penetration level of 20.9%	\$ 63.51	-
e2 OMPP threshold penetration level of 57.6%	\$164.35	-

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		<u>OMPP</u>	<u>TRA</u>
f1	25% of the LAE that is assumed to be eliminated remains in the system (approximate)	\$121.00	\$106.00
f2	25% of the LAE that is assumed to remain in the system is eliminated (approximate)	\$108.00	\$ 94.00

These results show how the loss cost estimates for bodily injury liability could vary under different assumptions. For example, under the assumption that all FLA claims are non-economic, the TRA loss cost estimate increases by \$0.32 (\$97.61 minus \$97.29). Under the assumption that all FLA claims are economic, the TRA loss cost estimate declines by \$1.59. We also note that a change in the assumed trend rate for non-economic losses affects OMPP and TRA differently. An increase in the non-economic loss trend rate results in an increased loss cost for TRA, but a reduced loss cost for OMPP. This occurs because economic losses comprise a relatively greater proportion of claims that pass the OMPP threshold; hence, increasing the trend on non-economic losses (and reducing the trend on economic losses to maintain the 8.8% balanced trend rate) reduces the estimated OMPP loss cost. In fact, under (b1) the estimated TRA loss cost exceeds the estimated OMPP loss cost. We note that each of the values displayed in the above table assume that all other assumptions remain unchanged.

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C. Accident Benefits: Income

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$21.26 (from Exhibit AR-12)
OMPP	\$20.64 (from Exhibit AR-16)
TRA	\$19.89 (from Exhibit AR-18)

2. Discussion

The relative costing for income benefits consists of adjusting the OMPP and TRA baseline costs for the differences in benefits between Pre-OMPP and the other two products. The adjustments are accomplished by application of the following ratios to the baseline costs:

$$\begin{aligned}\text{OMPP adjustment ratio} &= \frac{(\text{Estimated present value of total cost of income benefits under OMPP})}{(\text{Estimated present value of total cost of income benefits under Pre-OMPP})} \\ \text{TRA adjustment ratio} &= \frac{(\text{Estimated present value of total cost of income benefits under TRA})}{(\text{Estimated present value of total cost of income benefits under Pre-OMPP})}\end{aligned}$$

Thus, the three quantities that must be estimated are the present values of the total cost of income benefits under each of the three products. In the following narrative we provide an overview of the development of these costs. More detailed descriptions and exhibits are provided in Appendix 6.

The level of income benefits under each of the plans differs by category of claimant (employed, unemployed, student, retired, etc.). Therefore, the costing of each plan must contain the following elements:

- distribution of the Ontario population among the several categories of claimants
- estimation of accident frequencies by category
- adjustment of accident frequencies to produce estimated claims frequencies
- estimation of average claim amounts by plan and category
- combination of 1 through 4 to produce the adjustment ratios defined above.

We address each area in turn in the following narrative.

a. Distribution of the Ontario population by claimant category

The categories of disabled persons that qualify for income benefits differ among the three plans. For example, under Pre-OMPP and OMPP, no benefits are payable to anyone under age 16. Under TRA, payments are provided for lost school years at all ages. We therefore define population categories that accommodate the income benefits categories of all three plans. The following list of categories accomplishes that end:

Employed
Unemployed
Pre-school
Elementary school
Secondary school
Post-secondary school
Caregiver
All other
Retired

From population and employment statistics for Ontario, we estimate the following distribution of prospective claimants:

Employed	51.6%
Unemployed	4.0%
Pre-school	6.9%
Elementary school	12.2%
Secondary school	5.9%
Post-secondary school	3.5%
Caregiver	7.5%
All other	1.0%
Retired	10.7%

The distribution of claimants sums to a figure greater than 100% because some claimants may receive benefits under more than one category. For example, under TRA students can get a student benefit and an employment benefit if they hold a part-time job.

b. Estimation of accident frequency by category

Since the costings of the three plans are on a relative basis, it is sufficient to estimate the relative frequency of claims among the claimant categories. We therefore establish the "employed" category (by far the largest of the categories) as the benchmark category and assign it a frequency value of 1.00. We then use automobile accident statistics by age for Ontario from the Ontario Road Safety Annual Report. By the use of certain simplifying assumptions we are able to translate the data on number of injuries by age into estimated relative accident frequencies for each income benefits category. Those assumptions include:

- Those in the categories employed, unemployed, caregiver and "all other" have equal accident frequencies.
- 0 - 4 year olds and half of five year olds are pre-school.
- One half of five year olds, all children aged 6 through 13 and one half of 14 year olds are in elementary school.
- One half of 14 year olds, all 15 year olds, 90% of 16 and 17 year olds and 15% of 18 year olds are in secondary school. (The proportions account for drop outs and those graduating before reaching age 18.)
- 45% of 18 year olds, 50% of 19 year olds, 45% of 20 year olds and 36% of 21 year olds are in post-secondary school.
- All those age 65 or more are retired.

As a result of our analysis, we select the following relative accident frequencies:

	Relative Accident <u>Frequency</u>
Employed	1.00
Unemployed	1.00
Pre-school	0.25
Elementary school	0.45
Secondary school	1.00
Post-secondary school	1.70
Caregiver	1.00
All other	1.00
Retired	0.40

- c. Adjustments to accident frequencies to produce estimated claims frequencies

Since the frequency of accidents is not expected to be affected by changes in the insurance coverages, the relative frequencies above should be equally applicable to Pre-OMPP, OMPP and TRA. However it is likely that the claim frequency could differ among the three systems (claim frequency can differ from accident frequency in that not all accident victims will seek reparations). Pre-OMPP income benefits are primarily payable to employed people. We therefore consider the possibility that the significantly greater level of benefits for employed people under OMPP and under TRA could affect the frequency of claims. Benefits under each of the three plans are based on the level of the claimant's

wages and are secondary (except in the first two weeks of benefits under Pre-OMPP) to both private and Canadian Pension Plan (CPP) disability plans. However, the maximum benefits payable under OMPP and under TRA are significantly greater than under Pre-OMPP. In addition, benefits are subject to minimums under OMPP and TRA, but not under Pre-OMPP. The following minimums and maximums apply:

	<u>Minimum</u>	<u>Maximum</u>
Pre-OMPP	None	\$ 140
OMPP	\$ 185	\$ 600
TRA	\$ 185	\$1,000

In consideration of the significant differences in benefit levels between Pre-OMPP and the other two plans, we select a claim frequency for the employed category for OMPP and TRA of 1.10, relative to the claim frequency for the employed category under Pre-OMPP of 1.00. All other relative claim frequencies for all three plans are set equal to the accident frequencies listed above.

d. Estimation of average claim amounts by plan and category

Income benefits payments are made under all three plans on a periodic basis. Because payments can be made over many years, the time value of money must be considered in the estimation of costs per claim. Therefore, costs per claim for income benefits are expressed in terms of present values of future payments over the duration of benefits. The derivation proceeds in two steps. In step one, we estimate the average weekly amount payable. In step two, we estimate the average present value cost of the string of weekly payments over the duration of benefits.

"Step One - Estimation of Weekly Income Benefits"

In some cases, step one is straightforward. For example, under Pre-OMPP primary unpaid housekeepers are entitled to payments of \$70 per week for up to 12 weeks. Therefore, the average weekly payment for that category is \$70. Other cases are more complex. For example, for the employed category under TRA, the benefit is based on 90% of net wages, subject to a minimum and a maximum. Therefore a distribution of gross wages must be estimated, then net wages must be calculated, then the average benefit is calculated subject to the minimum and maximum. In addition, private and CPP offsets must be applied. Assumptions which underlie this step of the process include:

- Wages inflate at the same annual rate as CPI (4.5%).
- Distribution of gross income for employed persons follows the Ontario estimated income distribution, adjusted to July 1, 1993 using an annual inflation rate of 4.5%.
- One half of persons disabled longer than four months are sufficiently seriously disabled to qualify for CPP disability benefits.
- 60% of full-time employed are covered by private or employer sponsored income replacement plans. Such plans are assumed to be not indexed and replace, on average, 70% of gross lost wages after consideration of any CPP disability benefits payable. Part-time employed persons do not have private income replacement

coverage. (We tested the sensitivity of our results to changes in this assumption. Results are provided at the end of this section.)

- Taxable income is assumed to be 70% of gross income.
- The tax rates in 1993 and 1994 for federal, provincial, CPP and UI will be the same as those in effect in 1991.
- Those earning less than \$8,000 per year are employed part-time, those earning more than \$8,000 are employed full-time.

Average weekly benefit amounts are estimated for each category using procedures documented in Appendix 6. The following provides an example of the procedure for wage earners under Pre-OMPP.

Payments to employed people under Pre-OMPP are based on 80% of gross weekly wages, subject to a maximum weekly benefit of \$140. In order to calculate the average weekly benefit for employed people in Ontario, we first create a table of wages by amount (see Exhibit AR-20). For each gross average wage level, the wage table shows the portion of the Ontario population earning those average wages (Columns (1) and (2)). Since the wage data available to us are for 1989, we trend the average gross wages in Column (1) to 1993 levels using a wage inflation rate of 4.5% (Column (3)). We then calculate the average 1993 gross weekly wage (Column (4)). Column (5) represents the estimated CPP disability pension. The weekly benefit before application of offsets is calculated in Column (6) as 80% of gross weekly wages, subject to a \$140 maximum benefit. In Column (7) is calculated the average benefits after consideration of private plan offsets; and in Column (8) is calculated the

average benefits after consideration of both private and CPP offsets. By weighting the weekly benefits by the distribution of gross average wages (Column (2)) in each range, we estimate the average weekly benefits of \$124.54 with no offsets, \$89.39 with private plan offsets, and \$82.63 with private plan and CPP offsets.

Wage earner average weekly benefits for OMPP and for TRA are estimated in a similar manner. Average weekly benefits for non-wage earners are estimated using procedures which are described in Appendix 6.

"Step Two - Estimation of the Present Value Total Cost of Income Benefits"

The average weekly benefit amounts are used to estimate the present value of benefits over the duration of benefits. In addition to the average weekly benefits for each category, the procedure incorporates the length of disability, mortality, the time value of money and indexing of benefits where applicable. Assumptions which underlie this step of the process include:

- Indexing of benefits takes place (where applicable) annually on the anniversary of the accident.
- Disability duration will follow the pattern developed by the Société de l'assurance automobile du Québec with adjustments after 2 years (3 years for OMPP) for the change in eligibility requirements. (We tested the sensitivity of our results to changes in this assumption. Results are provided at the end of this section.)

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- For the calculation of the present value of future benefits, a discount rate four percentage points above the rate of inflation will apply.
- Disabled persons are assumed to be, on average, the following ages by category:

Employed	37
Unemployed	37
Pre-school	3
Elementary school	9
Secondary school	15
Post-secondary school	20
Caregiver	37
All other	37
Retired	72

- The average life expectancy of retired persons is twelve years.
- Of those categorized as unemployed, 75% have been unemployed less than 6 months, 25% have been unemployed between 6 months and 3 years.
- The annual increase in the CPI will average 4.5%. (We tested the sensitivity of our results to changes in this assumption. Results are provided at the end of this section.)

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- The annual increase in TRA benefits for wage earners necessary to increase total benefits, including benefits from private and CPP disability plans, by 4.5% per year is 7.0% (the derivation of the 7.0% factor is provided in Appendix 6).
- One-half of unemployed have held a job for at least six months of the twelve months immediately preceding the accident.

We now return to our example of wage earner benefits under Pre-OMPP to illustrate the procedure used to estimate the present value cost of income benefits using the weekly benefit amounts.

The calculation is displayed in Exhibit AR-21. Column (1) displays a time measure in days, then weeks, then months, and finally in years. Column (2) converts the time measure from Column (1) into the equivalent value in years. Column (3) is the disability duration table. With the number of people disabled at eight days set equal to 1,000,000, Column (3) displays the number disabled at each point in time. Column (4) displays the present value factors based on an 8.5% discount rate. Column (5) contains the weekly benefit values derived above. The initial entry in Column (5) is \$17.79, which is the daily equivalent of the initial weekly benefit (\$124.54 divided by 7). As one proceeds down Column (5), at day 15 the benefit changes to \$12.77, which is the daily equivalent of the weekly benefit with private plan offset of \$89.39. As one continues down the page, the time measure (Column (1)) changes from days to weeks and the benefit amount in Column (5) changes from the daily benefit to the corresponding weekly benefit of \$89.39. At 17.5 weeks, CPP income benefits begin to be paid to those who qualify, and the benefit amount changes to the weekly benefit reduced for both private and

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CPP benefits (\$82.63). This weekly amount continues to be paid to those remaining disabled until year 28.5, at which time the average disabled worker is assumed to reach the retirement age of 65. At that time both private and CPP disability payments cease and the Pre-OMPP benefit increases to the amount estimated to be paid with no offsets. (The Column (5) value for years 28.5 and higher of \$6,476 is equal to 52 times the weekly estimated benefit amount without offsets of \$124.54.)

The benefit amounts in Column (5) are multiplied by the number of people remaining disabled at each time point (Column (3)) and by the present value factor (Column (4)) to produce an estimated present value total payout at each time point (Column (6)). These values are summed and the total is divided by the base number disabled (1,000,000) to produce an estimated present value average total payout per disabled wage earner of \$2,512.

The present value estimated total benefit amounts for the other benefit categories and the other plans are calculated similarly. The resulting present values of benefits by category and plan are:

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	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Employed	\$ 2,512	\$ 5,733	\$ 7,672
Unemployed	1,256	5,161	12,272
Pre-school	0	609	3,539
Elementary school	0	1,152	5,441
Secondary school	0	2,314	7,971
Post-secondary school	0	5,161	12,930
Caregiver	559	5,161	7,064
All other	559	5,161	5,053
Retired	0	4,483	4,376
Child care - caregiver	0	2,172	6,204
Child care - employed	0	0	563

e. Calculation of Adjustment Ratios

The above present value costs by category and plan, when combined with the relative frequencies by category and weighted by the claimant distribution, produce the following total average costs:

<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
\$1,394	\$4,754	\$7,924

The OMPP and TRA adjustment ratios are then calculated as follows:

OMPP adjustment ratio	=	\$4,754/\$1,394
	=	3.410
TRA adjustment ratio	=	\$7,924/\$1,394
	=	5.684

Applying the adjustment ratios to the baseline loss costs produces the estimated relative present value loss costs for the three products:

Pre-OMPP	=	\$ 21.26
OMPP 3.410 x \$ 20.64	=	\$ 70.39
TRA 5.684 x \$ 19.89	=	\$113.07

3. Sensitivity Analysis

As indicated above, we tested the sensitivity of our results to changes in several of the key assumptions that underlie this analysis. Results are as follows:

a. Percentage of Full-Time Workers Receiving Private Plan Offsets

In the above costing we assume that 60% of full-time workers receive offsets to their income benefits from private plans. We tested the sensitivity of the above results by decreasing to 40%, then increasing to 80%, our assumption of the percentage of full-time workers that are covered by private income replacement plans. It does not attempt to measure a change in product definition that would increase (or decrease) the percentage of workers whose private plan benefits would be primary. The resulting estimated relative present value loss costs for the three products are as follows:

Percent with Private Plans	Relative Loss Costs				
	Pre-OMPP	OMPP		TRA	
		Value	% Change	Value	% Change
40%	\$21.26	\$75.06	+ 7%	\$120.18	+ 6%
60% (Base)	\$21.26	\$70.39	-	\$113.07	-
80%	\$21.26	\$64.58	- 8%	\$101.32	-10%

Results show that variation in the percentage of full-time workers who receive private plan offsets has some effect on relative Pre-OMPP costs, and has a greater impact on both OMPP and TRA costs. This is not unexpected. Lowering the percentage that receive private plan offsets increases the averages of weekly income benefits. However, the average weekly benefit is subject to maximums of \$140, \$600, and \$1,000 under Pre-OMPP, OMPP, and TRA, respectively. As such, the effect of the increase in the average weekly benefits is limited by the maximum benefit amount. Since the OMPP and TRA plan maximums are significantly higher than the Pre-OMPP maximum, the OMPP and TRA relative income benefits costs will increase more than the Pre-OMPP costs.

b. Disability Duration Table

We tested the sensitivity of the results of the income benefits costing to the assumed length of disability by modifying (both up and down) the entries in each of the two disability duration tables. We did this by increasing by 50%, and decreasing by 50%, the number of disabled people that cease receiving income benefits as a result of the change in eligibility requirements. These changes modify the average length of disability by approximately 18%, both higher and lower. Results of the sensitivity analysis are as follows:

Disability Duration	Relative Loss Costs				
	Pre-OMPP	OMPP		TRA	
		Value	% Change	Value	% Change
Longer	\$21.26	\$69.83	< 1%	\$119.74	+ 6%
Base	\$21.26	\$70.39	-	\$113.07	-
Shorter	\$21.26	\$71.03	< 1%	\$107.61	- 5%

Results show that variation in the average length of disability has little impact on relative OMPP costs (a change of less than 1%), and has a greater effect on TRA costs. This result is not unexpected. TRA benefits are indexed to the CPI; Pre-OMPP and OMPP are not. Therefore income benefits for the long-term disabled are much greater after a few years under TRA than under Pre-OMPP. For example, consider a disabled person who receives an initial income benefit of \$100 under both Pre-OMPP and TRA. After ten years, his weekly payment under TRA will have risen to \$155, but will have remained at \$100 under Pre-OMPP. And if he is receiving private plan benefits that are not indexed, there is an additional annual increase in TRA benefits to keep the total benefits even with inflation, which boosts the payment at 10 years to \$197 per week. Therefore increasing the length of disability adds relative costs to TRA.

c. Inflation rate

In all of our estimates, we assume an annual rate of change in the Consumer Price Index (CPI) which averages 4.5%. We tested the sensitivity of the results of the income benefits costing to this base assumption by decreasing the assumed average annual CPI change to 3% and by increasing it to 6%. Changes in the CPI assumption cause the TRA 7% total benefit index to change. In addition, because we assume a constant differential between the rate of inflation and the discount rate, the discount rate used to calculate present values changes also. Those changes are as follows:

	<u>Total TRA Index</u>	<u>Discount Rate</u>
3% Inflation	4.5%	7.0%
4.5% (Base)	7.0%	8.5%
6% Inflation	9.3%	10.0%

Results of the analysis are as follows:

<u>Inflation Rate</u>	<u>Pre-OMPP</u>	<u>Relative Loss Costs</u>			
		<u>OMPP</u>		<u>TRA</u>	
		<u>Value</u>	<u>% Change</u>	<u>Value</u>	<u>% Change</u>
3%	\$21.26	\$71.50	+2%	\$99.38	- 12%
4.5% (Base)	\$21.26	\$70.39	-	\$113.07	-
6%	\$21.26	\$69.48	- 1%	\$126.84	+12%

Results show that variation of the inflation rate has little effect on relative OMPP costs, and has a significant impact on estimated TRA costs. This occurs because Pre-OMPP and OMPP benefits are not indexed to inflation, but TRA benefits are indexed.

d. Primacy of TRA Income Benefits

One of the natural by-products of our analysis is the ability to compare our results to the estimated costs if TRA were primary coverage relative to private income replacement plans. The estimated relative cost of TRA benefits, if those benefits are primary to private income replacement plans, is approximately \$168. This is an increase of approximately 49% over the estimated cost of TRA as secondary coverage. The derivation of this estimate is presented in Appendix 6, Exhibit 13.

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D. Accident Benefits: Medical

1. Baseline Loss Costs

Pre-OMPP	\$23.00 (Exhibit AR-12)
OMPP	\$22.37 (Exhibit AR-16)
TRA	\$21.71 (Exhibit AR-18)

2. Discussion

Under OMPP and TRA, the Pre-OMPP medical benefits coverage is expanded, in both scope and amount of coverage that is provided. The reader is referred to Appendix 11 for a detailed comparison of the medical benefits under the three products.

The approach we have taken to costing medical benefits under OMPP and TRA is to add to the baseline costs (displayed above) an estimate of the cost of the coverage that has been added (compared to the Pre-OMPP product) under each product. In so doing we categorize the increments in coverage from the Pre-OMPP product as follows:

Attendant Care Benefits

- including coverage for attendant care up to \$3,000 a month with an aggregate limit of \$500,000 under OMPP; and indexing the \$3,000 monthly limit and removing the maximum aggregate limit under TRA.

Rehabilitation Benefits

- expanding coverage under both OMPP and TRA to include necessary home and vehicle renovations
- increasing the benefit period from four years to ten years under OMPP; and removing the benefit period limitation under TRA
- increasing the maximum benefit (including Supplementary Medical) from \$25,000 to \$500,000 per person under OMPP; and removing the maximum under TRA.

Supplementary Medical Benefits

- broadening of the coverage under both OMPP and TRA for reasonable expenses
- increasing the benefit period from four years to ten years under OMPP; and removing the benefit period limitation under TRA
- increasing the maximum benefit (including Rehabilitation Benefits) from \$25,000 to \$500,000 per person under OMPP; and removing the maximum benefit under TRA.

The estimation of the costs of these coverage enhancements is subject to a considerable degree of uncertainty. First, there is virtually no directly relevant data upon which to base loss projections. The expansion of coverage under OMPP and TRA and the level of detail in the IBC statistical database preclude a direct extrapolation of estimated costs from the available Pre-OMPP experience.

Rehabilitation facilities in the province do not maintain the type of data that are needed to cost precisely the rehabilitation and care benefits. And the experience in the United States, which also is not available in the detail required, was incurred under a different system of health care.

Second, with particular regard to the rehabilitation coverage provided under OMPP and TRA, the costs are very much dependent upon what costs are covered under OHIP and what costs are covered by automobile insurers; and this determination is typically made on a case by case basis. Currently, for example, if an automobile accident victim is treated in an OHIP approved rehabilitation facility, then the costs for those rehabilitation services will be covered by OHIP. However, rehabilitation services received in a rehabilitation facility that is not covered by OHIP would be borne by the automobile insurer. Also, under certain circumstances, OHIP will provide coverage for home care. Further, any decisions by the Government to limit payments made under OHIP could also directly affect automobile insurance costs.

Third, the extent to which the additional benefits that are provided under OMPP and TRA will be utilized is difficult to estimate. It is our understanding that Ontario may not have adequate rehabilitation service capacity to meet the demand for such services. This means that in general, at the outset, accident victims may not receive the same degree of rehabilitation/care that they perhaps would if such services were more readily available. As the availability of rehabilitation service increases, utilization, and hence costs, will likely increase. Increased public awareness of the extent of benefits provided should also lead to increased utilization and costs over time.

Fourth is the issue of control. Coverage under both OMPP and TRA provides for reasonable expenses and for the reasonable costs of goods and services that are required. But it is not clear how the term "reasonable" will be defined in practice. We note that under OMPP and TRA procedures, insurers are required to pay disputed expenses until the dispute is resolved. Quebec and Michigan are examples of two jurisdictions providing medical coverage that is similar to the coverage provided under OMPP and TRA, but with different degrees of control over what benefits are provided. In Quebec, where the Société exerts a higher degree of control over which goods and services are covered, the cost for medical coverage is under \$40 per car. In Michigan, where controls do not exist to the same degree, the cost for medical coverage is more than US \$150 per car. We quickly point out that the Quebec and Michigan systems and related costs are not directly comparable because of the differences in health care and delivery systems, as well as in accident frequencies and demographics. But the large difference in costs does provide an indication of the relationship between control and costs.

Fifth, the removal of the aggregate time and benefit limits under TRA increases the uncertainty in estimating the medical benefits costs.

Our estimates of average costs are largely based on professional judgments formed from the sparse relevant information that is available from IBC, information received from discussions with various providers of rehabilitation and care services in Ontario, and available experience from the U.S., particularly that of Michigan. Consideration is also given to Quebec experience, and the reader is referred to Subsection 3 for a discussion of Quebec experience.

A discussion of the assumptions we make in estimating the costs under OMPP and TRA for PY 92/93, and of the consideration in developing those assumptions follows.

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a. Attendant Care Benefits

In estimating the PY 92/93 cost of the (attendant) care benefits provided under the OMPP and TRA products, we make the following assumptions:

- "Long-term" care benefits will be provided at a claimant incidence rate equivalent to 0.5%. This equates to approximately 150 people requiring "long-term" care in PY 92/93.
- 50% of those requiring "long-term" care (or about 75 accident victims) will receive benefits equal to the maximum monthly benefit provided: \$3,000 a month under OMPP and \$3,000 indexed under TRA; subject to the \$500,000 total limit under OMPP, and for life and without limit under TRA.
- 50% of those requiring "long-term" care (about 75 accident victims) will receive benefits of \$1,000 per month, increasing at 4.5% per year; for five years under both OMPP and TRA.
- The CPI, and hence the indexed monthly benefit limit under TRA, will increase at an average rate of 4.5% per year.
- The estimated PY 92/93 medical frequency rates under OMPP and TRA are .64% and .62%, respectively.
- Costs will be incurred beginning six months following the accident, and the average accident will occur six months after the average date of policy issuance.

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- Expected mortality for those requiring "long-term" care follows that of the general population in Canada, for an individual 30 years of age.
- ALAE and ULAE costs associated with care benefits are 9% of the assumed care costs.
- Ten percent of the medical claims for PY 92/93 will require "short-term" care and will incur care costs of \$2,500; 5% of the medical claims will incur "short-term" care costs of \$5,000; 2.5% of the medical claims will incur "short-term" care costs of \$10,000 (all in present dollars).

These assumptions are based on the following considerations.

- i "Long-term" Attendant Care Claimant Incidence Rate
 - As an indication of the percent of medical claimants that will require extensive or "long-term" attendant care, we considered the percent of Pre-OMFP medical claims in which the maximum policy limit of \$25,000 was paid. That is, it would seem reasonable to assume that claims reaching the full Pre-OMPP policy limit are more likely to require "long-term" care. According to the Osborne Inquiry report, an IBC study of PY 83/84 losses shows that the \$25,000, four year medical coverage limit is reached in approximately 0.1% of the medical claims. A more recent report by IBC, prepared for OAIR in November 1991 (relevant excerpts presented as Appendix 7, Exhibit 1),

indicates the percentage is closer to 0.5%. (We note that due to time constraints the November IBC report was not subject to detailed quality review by the IBC prior to its release.) However, not all claims reaching the \$25,000 limit would be expected to be "catastrophic" claims requiring long-term care.

- We also considered a study published by the Insurance Research Council (formerly All-Industry Research Advisory Council) in 1989 entitled Compensation For Automobile Injuries in the United States. That study found 0.5% of all surveyed automobile related medical claims in the U.S. involved permanent brain injuries or paralysis. These are the types of injuries typically requiring "long-term" attendant (and extensive rehabilitation) care, although not all such victims would be expected to require such care to the same degree.
- As another indication of the percent of medical claimants requiring "long-term" attendant care, we considered the Michigan Catastrophic Claims Association (MCCA) loss experience. (The MCCA is essentially a pooling arrangement in which the portion of first party automobile losses in excess of \$250,000 per claim is shared among insurers.) According to information we received from the MCCA, the frequency rate (i.e., claims in excess of \$250,000) projected for the MCCA for fiscal accident year 1990/91 is estimated at 59 claims per million cars, which would be roughly equivalent to about .85% of all medical

claims if Michigan has a medical claim frequency rate similar to that which we have estimated for Ontario. However, we note data published by the National Association of Independent Insurers indicates a medical frequency rate in Michigan that is more than double that estimated for Ontario, which would imply a Michigan frequency rate for claims exceeding \$250,000 that is much lower than .85%.

- Information from the Canadian Paraplegic Association of Ontario (CPAO) indicates the number of new spinal cord injuries reported to that organization in 1990 was 159. A breakdown of figure by cause is not available, but we were advised that many of the injuries are due to automobile and motorcycle accidents (which are not considered in this study.) We were also advised that not all people with this type of injury come into contact with the organization. The 159 injury figure represents another indication of the percent of medical claims requiring attendant care.
- The Osborne Inquiry accident benefits database indicates there to be, on average, approximately 1.2 claimants per claim.

Based on this information we assume a long-term attendant care claimant incidence rate equivalent to 0.5% for PY 92/93.

ii Average Cost per Month and Duration of Benefit

At estimated costs of between \$10-\$25 per hour for family/professional home care, and higher costs for institutional care, the \$3,000 a month maximum limit under OMPP and \$3,000 a month indexed limit under TRA could be exhausted in a high percentage of cases requiring "long-term" attendant care. Yet, it is unlikely that all cases requiring "long-term" attendant care would require the full \$3,000 a month benefit (i.e., more than 8 hours of care a day). Models considered by the MCCA in estimating its costs support this premise, and additionally assume that not all "long-term" care claims require care for life. Also, information obtained from the Ontario Workers' Compensation Board indicates that care benefits paid under that system average approximately \$1,000 per month. We note, though, that the board closely monitors all expenditures; we attach, as Appendix 7, Exhibit 2, a copy of the "Activities of Daily Living Scale" (ADLS) for reference purposes.

Based on these considerations, we make the assumption that, subject to the OMPP and TRA limits, 50% of those claimants requiring "long-term" attendant care will incur costs of more than \$3,000 per month, for life, increasing at 4.5% per year; and that 50% will incur costs of \$1,000 per month, increasing at 4.5% per year, for five years.

iii Medical Claims Requiring "Short-term" (less extensive) Attendant Care

We believe that it is reasonable to assume that less seriously injured claimants will also require a degree of attendant care. We therefore incorporate into our cost estimates the following assumptions: 10% of the medical claims will incur \$2,500 in attendant care costs; 5% of the medical claims will incur attendant care costs of \$5,000; and 2.5% of the medical claims will incur attendant care costs of \$10,000. The 10%, 5% and 2.5% estimates are based on the disability table we use to cost the income benefits (Appendix 6). Ten percent represents the approximate percent of those disabled more than six months, but less than one year; five percent represents the approximate percent of those disabled more than one year but less than two years; and 2.5% represents the approximate percent of those disabled for more than two years, excluding those assumed to require "long-term" attendant care. The three levels of assumed average "short-term" care costs are judgmentally selected to correspond to the degree of injury (i.e., relatively lower costs for lesser degree of injury).

iv Other Assumptions

We believe that the nature of the types of costs incurred in providing attendant care are such that increases in costs should track with increases in the CPI. Therefore, our estimates reflect care cost increases at the assumed 4.5% long-term trend in the CPI.

We assume that the mortality of those requiring "long-term" attendant care will follow that of the general Ontario population (Source: Statistics Canada, Life Table, 1985-1987, Ontario, Appendix 7, Exhibit 3). The assumed average age of an injured person of 30 years is based on statistics published in the 1988-1989 Ontario Road Safety Annual Report ("Category of Persons Injured by Age Groups 1989"). We note that a study of catastrophic automobile injury claims published by AIRAC in 1989 ("Catastrophic No-Fault Auto Injury Claims") found that many seriously injured automobile accident victims have a long life expectancy.

The derivation of our estimated medical frequency rates for OMPP and TRA for PY 92/93 is presented in Appendix 7, Exhibit 4.

We assume that both ULAE and ALAE will remain as a constant percent of losses. The 9% claim expense assumption is based on a 1991 study conducted by the RAND Institute and presented in a report titled "No-Fault Approaches to Compensating People Injured in Automobile Accidents."

b. Rehabilitation Benefits

In estimating the incremental cost of the rehabilitation benefits provided under the OMPP and TRA products, we make the following assumptions:

- "Extensive" rehabilitation will be provided at a claimant "incidence" rate equivalent to 0.5%. This equates to

approximately 150 people receiving extensive rehabilitation in PY 92/93.

- On average, those requiring "extensive" rehabilitation will incur the following costs (exclusive of claim expenses):

physical, vocational, social rehabilitation of \$4,000 per month for one year beginning six months following the date of the accident; \$2,000 per month for one year beginning 18 months following the date of the accident; \$1,000 per month for one year beginning 30 months following the date of the accident; \$500 per month for one year beginning 42 months following the date of the accident; and \$200 per month thereafter up to 10 years under OMPP and for life under TRA;

home/vehicle/workplace renovation of \$30,000 six months following the date of the accident, and \$4,000 every three years thereafter up to 10 years under OMPP and for life under TRA;

\$300 a month for other goods and services, including equipment, supplies and transportation, for 10 years under OMPP and for life under TRA.

- The average costs (above) for those requiring "extensive" rehabilitation will increase at the assumed long-term rate of change in the CPI of 4.5% per year.

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- Rehabilitation and Supplementary Medical costs incurred under OMPP are limited to \$500,000.
- 53% of those requiring "extensive" rehabilitation will incur costs equal to 47% of the assumed average costs enumerated above; 27% will incur costs equal to 94% of the assumed average costs; 13% will incur costs equal to 188% of the assumed average costs; and 7% will incur costs equal to 375% of the assumed average costs.
- Ten percent of the medical claims for PY 92/93 will require "less extensive" rehabilitation, and will incur incremental costs (above what they currently incur under Pre-OMPP) of \$2,500 (in present dollars); 5.0% of the medical claims will require "less extensive" rehabilitation and will incur incremental costs of \$5,000 (in present dollars); 2.5% of the medical claims will require "less extensive" rehabilitation and will incur incremental costs of \$25,000 (in present dollars).
- The estimated PY 92/93 medical frequency rates under OMPP and TRA are .64% and .62%, respectively.
- Expected mortality for those requiring extensive rehabilitation/renovation follows that of the general population in Canada, for an individual 30 years of age.
- ALAE and ULAE costs associated with rehabilitation benefits are 9% of the assumed rehabilitation costs.

These assumptions are based on the following considerations:

i "Extensive" Rehabilitation Claimant Incidence Rate

We assume a claimant incidence rate equivalent to 0.5% based on the same considerations described earlier for "long-term" care.

ii Average Cost per Month and Duration of Benefits for "Extensive" Rehabilitation

We contacted a number of Ontario-based organizations to try to obtain information on reasonable costs of rehabilitation and of home and/or equipment renovation not covered by OHIP. Those organizations included, among others, the Ontario Head Injury Association, Baycrest Hospital, Rehabilitation Management Inc., Lindhurst Hospital, Ministry of Health, OHIP, Canadian Paraplegic Association, and Designable Environments. We were advised that the degree of rehabilitation/renovation varies considerably on a case by case basis. For example, rehabilitation therapy could vary from one or two physical therapy sessions a week for a period of weeks, to very intense rehabilitation therapy over a period of many years, followed by a maintenance program for life. And home/vehicle renovation needs could range from an adjustment to the victim's vehicle to facilitate entry/exit, to the complete renovation of the victim's home.

In order to estimate the relative rehabilitation costs under OMPP and TRA, average rehabilitation costs, as well as the type of case by case variation described above, must be considered. Unfortunately, the organizations we contacted do not record and compile this type of information and were not able to provide the information in the detail required.

However, we did gain insight into the types of costs involved and the duration of these costs. That information forms the basis for the noted assumptions we make about both the average costs and the variation in those costs that could be expected to be incurred.

We note that our assumed distribution of the average costs into four categories of degree is exponentially based: Out of every 15 individuals requiring extensive rehabilitation, we assume that 8 will incur costs at a cost relativity of 1.0; 4 will incur costs at a cost relativity of 2.0; 2 will incur costs of a cost relativity of 4.0; and 1 will incur costs at a cost relativity of 8.0. For example, out of every 15 individuals requiring "extensive" rehabilitation, we assume that 8 will require renovations at a cost of 47% of 30,000, or \$14,000; 4 will require renovations at a cost of \$28,000; 2 will require renovations at a cost of \$56,000; and 1 will require renovations at a cost of \$112,000.

iii "Less Extensive" Rehabilitation

The IBC data discussed earlier suggest that less than 1% of the medical claims received the full \$25,000 benefit available to them under Pre-OMPP. This, in turn, suggests that the increases in the rehabilitation limit under OMPP and TRA may have relatively little impact on the less seriously injured. However, we believe it is appropriate to assume some degree of increased benefit utilization, particularly with regard to occupational and social rehabilitation. We therefore made the assumption that 10% of the medical claims will incur additional costs of \$2,500; 5% of the medical claims will incur additional costs of \$5,000; and that 2.5% of the medical claims will incur additional costs of \$25,000 beyond what they already incur. The 10%, 5% and 2.5% estimates are based on the disability table we use to cost income benefits (Appendix 6). Ten percent represents the approximate percent of those disabled more than six months but less than one year; five percent represents the approximate percent of those disabled more than one year but less than two years; and 2.5% represents the approximate percent of those disabled for more than two years, excluding those assumed to require "extensive" rehabilitation. The three levels of assumed average "less extensive" rehabilitation costs are judgmentally selected to correspond to the degree of injury (i.e., relatively lower costs for lesser degree of injury).

iv Other Assumptions for Rehabilitation

The other assumptions are based on the same considerations described earlier for attendant care.

c. Supplementary Medical Benefits

We make an additional assumption which, in our judgment, is required to recognize the impact on medical benefits costs due to the expected increased utilization and expansion of the supplementary medical benefits under OMPP and TRA:

- i As a result of increased utilization and the broadening of coverage, the adjusted baseline loss cost will increase by 20% in PY 92/93.

3. Resulting Cost Estimates

Pre-OMPP	\$23.00
OMPP	\$49.69
TRA	\$59.86

The calculations underlying these estimates are presented in Appendix 7, Exhibit 5. The estimated loss costs are displayed by benefit in Exhibit AR-22.

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4. Sensitivity Analysis

As an indication of the sensitivity of our cost estimates to the assumptions, we provide cost estimates under alternative assumptions as follows:

		<u>QMPP</u>	<u>TRA</u>
	Estimated Loss Costs (Base)	\$ 49.69	\$ 59.86
	<u>Estimated Loss Costs Under Alternative Assumptions</u>		
a1	Care/Rehab incidence rate @ 0.35% (as compared to base assumption of 0.5%)	\$ 46.76	\$ 53.52
a2	Care/Rehab incidence rate @ 0.65%	\$ 52.62	\$ 66.21
b1	The 10% of the medical claims that are assumed to require short-term care will incur incremental costs of \$1,250 (as compared to the base assumption of \$2,500)	\$ 48.82	\$ 59.02
b2	The 10% of the medical claims that are assumed to require short-term care will incur incremental costs of \$5,000	\$ 51.43	\$ 61.55
c1	The 5% of the medical claims that are assumed to require short-term care will incur incremental costs of \$2,500 (as compared to the base assumption of \$5,000)	\$ 48.82	\$ 59.02
c2	The 5% of the medical claims that are assumed to require short-term care will incur incremental costs of \$10,000	\$ 51.43	\$ 61.55

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		<u>OMPP</u>	<u>TRA</u>
d1	The 2.5% of the medical claims that are assumed to require short-term care will incur incremental costs of \$5,000 (as compared to the base assumption of \$10,000)	\$ 48.82	\$ 59.02
d2	The 2.5% of the medical claims that are assumed to require short-term care will incur incremental costs of \$20,000	\$ 51.43	\$61.55
e1	Supplementary medical costs will increase by 10% (as opposed to increasing by 20%)	\$ 47.45	\$ 57.69
e2	Supplementary medical costs will increase by 30%	\$ 51.93	\$ 62.04
f1	The 10% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$1,250 (as compared to the base assumption of \$2,500)	\$ 48.82	\$ 59.02
f2	The 10% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$5,000	\$ 51.43	\$ 61.55
g1	The 5% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$2,500 (as compared to the base assumption of \$5,000)	\$ 48.82	\$ 59.02

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		<u>OMPP</u>	<u>TRA</u>
g2	The 5% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$10,000	\$ 51.43	\$ 61.55
h1	The 2.5% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$12,500 (as compared to the base assumption of \$25,000)	\$ 47.51	\$ 57.75
h2	The 2.5% of the medical claims that are assumed to require less extensive rehab will incur incremental costs of \$50,000	\$ 54.05	\$64.09
i1	Home/vehicle/workplace renovation of \$60,000 and \$8,000 every three years thereafter (as compared to \$30,000 and \$4,000 every three years thereafter)	\$50.74	\$61.66
i2	Home/vehicle/workplace renovation of \$15,000 and \$2,000 every three years thereafter	\$49.45	\$59.02
j1	\$600 a month for other goods and services (as compared to \$300 a month)	\$50.45	\$62.31
j2	\$150 a month for other goods and services	\$49.39	\$58.70
k1	"Extensive" physical, vocational, social rehabilitation at double the assumed costs	\$51.90	\$63.91
k2	"Extensive" physical, vocational, social rehabilitation at half the assumed costs	\$48.43	\$57.90

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OMPP		Discount Rate		
		<u>7.0%</u>	<u>8.5%</u>	<u>10%</u>
11	Long-term medical cost inflation rate @ 6.0%; CPI @ 4.5%	\$50.74	\$50.00	\$49.35
12	Long-term medical cost inflation rate @ 4.5%; CPI @ 4.5% (Base)	\$50.57	\$49.69	\$49.21
13	Long-term medical cost inflation rate @ 3.0%; CPI @ 4.5%	\$50.40	\$49.50	\$49.07
TRA		Discount Rate		
		<u>7.0%</u>	<u>8.5%</u>	<u>10%</u>
m1	Long-term medical cost inflation rate @ 6.0%; CPI @ 4.5%	\$67.68	\$61.41	\$57.19
m2	Long-term medical cost inflation rate @ 4.5%; CPI @ 4.5% (Base)	\$65.41	\$59.86	\$56.15
m3	Long-term medical cost inflation rate @ 3.0%; CPI @ 4.5%	\$63.88	\$58.85	\$55.39
m4	Long-term medical cost inflation rate @ 6.0%; CPI @ 6.0%	\$73.95	\$65.55	\$60.06
m5	Long-term medical cost inflation rate @ 3.0%; CPI @ 3.0%	\$59.76	\$56.02	\$53.48

These results show how the loss cost estimates for medical benefits could vary under different assumptions. For example, under the assumption that the frequency rate for "long-term" care and "extensive" rehabilitation is 0.35%, the OMPP loss cost estimate declines by \$2.93 (\$49.69 minus \$46.76) and the TRA loss cost estimate declines by \$6.34 (\$59.86 minus \$53.52). The results show that the TRA cost estimate is more sensitive to changes in the assumed inflation/discount rates. This is because claims are paid out over a longer period of time under TRA, and because the estimates for OMPP are affected by the interaction of the aggregate limits and the inflation/discount rates. We note that each of the values displayed in the above table assume all other assumptions remain unchanged.

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E. Accident Benefits: Death

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$0.92 (Exhibit AR-12)
OMPP	\$0.92 (Exhibit AR-16)
TRA	\$0.90 (Exhibit AR-18)

2. Discussion

We derive an estimate of the OMPP and TRA death benefit loss costs by first comparing an estimate of the average death benefit to be paid under both OMPP and TRA, for a given set of assumptions, to an estimate of the average benefit paid under Pre-OMPP under the same set of assumptions. The relative differences in the estimated benefits are then applied to the respective adjusted baseline loss costs to arrive at an estimate of the OMPP and TRA death benefit loss costs.

a. Assumptions (Reference: Appendix 8)

- 22.5% of compensable deaths are married heads of household age 18-64 with 1.2 child dependants; 94% of whom were working at time of death; with net weekly income equal to \$465.33 at time of death.
- 22.5% of compensable deaths are married spouses age 18-64; 62% of whom were working at time of death; with net weekly income equal to \$465.33 at time of death.

- 5.0% of compensable deaths are married heads of household age 65 or over with no child dependants.
- 5.0% of compensable deaths are married spouses age 65 or over with no child dependants.
- 7.0% of compensable deaths are individuals age 65 or over, not married, with no dependants.
- 4.0% of compensable deaths are unmarried individuals age 18-64 with 1.6 child dependants; 67% of whom were working at time of death; with net weekly income equal to \$465.33 at time of death.
- 16.0% of compensable deaths are unmarried individuals age 18-64 with no dependants.
- 18.0% of compensable deaths are dependant children.
- TRA death benefits are, on average, subject to one year of indexing.

b. Benefits

- Death of Married Head of Household Age 18-64

Pre-OMPP: \$10,000 to surviving spouse, plus \$1,000 for each of 1.2 surviving child dependants

OMPP: \$25,000 to surviving spouse, plus \$10,000 for each of 2.2 surviving dependants (including spouse)

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TRA: \$95,830 to surviving spouse if deceased spouse was working, or \$52,250 to surviving spouse if deceased spouse was not working; plus \$10,450 for each of 1.2 surviving child dependants

- Death of Married Spouse Age 18-64

Pre-OMPP: \$10,000 to surviving spouse

OMPP: \$35,000 to surviving spouse

TRA: \$95,830 to surviving spouse if deceased spouse was working, or \$52,250 to surviving spouse if deceased spouse was not working

- Death of Married Head of Household Age 65 or Over

Pre-OMPP: \$10,000 to surviving spouse

OMPP: \$25,000 to surviving spouse, plus \$10,000 to surviving spouse dependant

TRA: \$52,250 to surviving spouse

- Death of Married Spouse Age 65 or Over

Pre-OMPP: \$10,000 to surviving spouse

OMPP: \$25,000 to surviving spouse

TRA: \$52,250 to surviving spouse

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- Death of Unmarried Individual Age 18-64 With Child Dependents

Pre-OMPP: \$10,000 to surviving dependants, plus \$1,000 to each of 1.6 surviving child dependants

OMPP: \$25,000 to surviving dependants, plus \$10,000 to each of 1.6 surviving child dependants

TRA: \$95,830 to surviving dependants if deceased was working, or \$52,250 to surviving dependants if deceased was not working; plus \$10,450 to each of 1.6 surviving child dependants

- Death of Dependant Child

Pre-OMPP: \$2,000 to surviving parents/guardian

OMPP: \$10,000 to surviving parents/guardian

TRA: \$10,450 to surviving parents/guardian

c. Assumed Average Relative Benefits (Reference Exhibit AR-23)

Pre-OMPP: \$6,594

OMPP: \$25,390; or 3.85 times the Pre-OMPP average benefit

TRA: \$52,663; or 7.99 times the Pre-OMPP average benefit

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3. Estimated Loss Costs

Pre-OMPP: \$0.92

OMPP: $3.85 \times \$0.92$, or \$3.54

TRA: $7.99 \times \$0.90$, or \$7.19

F. Accident Benefits: Funeral

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$0.17 (Exhibit AR-12)
OMPP	\$0.17 (Exhibit AR-16)
TRA	\$0.17 (Exhibit AR-18)

2. Discussion

We derive an estimate of the OMPP and TRA funeral benefit loss costs by first comparing an estimate of the average funeral benefit to be paid under both OMPP and TRA, assuming the maximum per person benefit is paid in all situations, to an estimate of the average benefit paid under Pre-OMPP also assuming the maximum benefit is paid. The relative differences in the estimated benefits are then applied to the respective adjusted baseline loss costs to arrive at an estimate of the OMPP and TRA funeral benefit loss costs.

a. Assumptions

- The maximum benefit will be paid for all compensable deaths.
- On average, the funeral benefit paid under TRA will be subject to one year of indexing (+ 4.5%).

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b. Assumed Average Relative Benefits

Pre-OMPP: \$1,000

OMPP: \$3,000; or 3.0 times the Pre-OMPP average benefit

TRA: \$6,270 ; or 6.27 times the Pre-OMPP average benefit

3. Estimated Loss Costs

Pre-OMPP: \$0.17

OMPP: $3.00 \times \$0.17$, or \$0.51

TRA: $6.27 \times \$0.17$, or \$1.00

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I. Accident Benefits: Quebec

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$0.26 (Exhibit AR-12)
OMPP	\$0.26 (Exhibit AR-16)
TRA	\$0.26 (Exhibit AR-18)

2. Discussion

As benefits under the accident benefits coverage are enhanced and the level of first party coverage in Ontario moves closer to that in Quebec, the loss cost under the Quebec coverage should reduce. The assumption we make in developing loss cost estimates for this relatively minor coverage is that the loss cost will reduce in approximate proportion to the increase in the accident benefits loss cost under OMPP and TRA.

3. Estimated Loss Costs

Pre-OMPP	\$0.24
OMPP	\$0.15
TRA	\$0.08

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G. Uninsured Motorist

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$28.66 (Exhibit AR-12)
OMPP	\$28.90 (Exhibit AR-16)
TRA	\$28.37 (Exhibit AR-18)

2. Discussion

Based on reviews of the rate filings of several of the leading Ontario insurers, we assume that 90% of all uninsured motorist losses are related to bodily injury claims (UM-BI), and 10% are attributed to property damage claims (UM-PD). Then, in absence of a database of uninsured motorist claims, we assume that claims in the Osborne Inquiry bodily injury liability database, with loss amounts capped at \$200,000, are representative of the distribution of UM-BI losses. We then follow the same approach described for bodily injury liability to derive an estimate of the UM-BI loss costs under OMPP and TRA. To that estimate we add the corresponding UM-PD loss cost (which we assume would not change under either OMPP or TRA), which produces our estimates of the uninsured motorist loss cost under OMPP and TRA.

3. Estimated Loss Costs

Pre-OMPP	\$28.66
OMPP	\$10.17
TRA	\$10.67

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We note that, unlike our estimates for bodily injury liability, the estimated uninsured motorist loss cost under TRA is greater than under OMPP. As explained in the bodily injury liability discussion, the elimination of economic losses from tort under TRA allows for the policy limit to apply fully to non-economic losses. For example, an accident victim, injured by an uninsured driver, who has \$150,000 of economic loss and \$150,000 of non-economic loss would only be able to collect \$200,000 under his uninsured motorist policy in the Pre-OMPP product environment. Assuming some allocation of the \$200,000 award between economic and non-economic damages, the victim may not be able to recover fully his/her non-economic damages in this situation. But under TRA, the full \$200,000 policy limit becomes available to provide for the victim's non-economic damages. As a result, the victim would collect his/her full non-economic damage of \$150,000 under TRA.

When we subject the claims in the Osborne Inquiry database to the OMPP and TRA products, we find that, by virtue of the release of the \$200,000 limit (as per the example above), fewer losses are eliminated under TRA than under OMPP (an assumed threshold loss penetration level of 30.3% under OMPP versus a deductible loss penetration level of 31.4% under TRA, which we adjusted to 28.4% - the same as bodily injury liability for reasons of reasonableness).

Appendix 5, Exhibits 2 and 3 present the calculations underlying these cost estimates.

H. Underinsured Motorist

1. Adjusted Baseline Loss Costs

Pre-OMPP	\$3.00 (Exhibit AR-12)
OMPP	\$3.03 (Exhibit AR-16)
TRA	\$2.95 (Exhibit AR-18)

2. Discussion

In the absence of a database of underinsured motorist claims, we assume that claims in the Osborne Inquiry bodily injury liability database with loss amounts in excess of \$200,000 are representative of the distribution of underinsured motorist losses. We then follow the same approach described for bodily injury liability to derive an estimate of the underinsured motorist loss costs under OMPP and TRA.

3. Estimated Loss Costs

Pre-OMPP	\$3.00
OMPP	\$1.78
TRA	\$0.57

We note that, with non-economic losses capped at approximately \$250,000 (indexed), the exposure to underinsured motorists losses under TRA is quite low.

Appendix 5, Exhibits 2 and 3 presents the calculations underlying these cost estimates.

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Subsection 3

Subsection 3: External Adjustment and Final Loss Cost Estimates

Up to this point in our analysis, our estimates of Ontario accident benefits loss costs are based largely on Ontario experience prior to the implementation of OMPP. The advantage of this approach is that the loss experience is reflective of the Ontario demographic, economic, administrative and judicial environment. The disadvantage is that it is not based on actual loss experience of a system providing enhanced first party benefits such as those provided under OMPP and TRA.

In order to overcome this limitation, we review the loss experience of what we believe to be the external system providing a package of benefits most relevant for the costing of OMPP and TRA; the first party system that has existed in Quebec since 1978.

To gain additional perspective on our Ontario estimates of accident benefits loss costs we evaluate the Quebec accident benefits loss costs by adjusting them to reflect known differences between Quebec and Ontario, such as differences in accident frequencies, average wages, and mix of vehicles. Concurrently, we develop estimates of loss costs for Quebec-type accident benefits coverages, based on Ontario Pre-OMPP loss experience. This is done in a manner that is analogous to the way in which we estimate OMPP and TRA loss costs. We then compare the Quebec-based and Ontario-based loss cost estimates of the Quebec-type benefits to determine the relationship between them. The following table summarizes our findings.

Quebec-type Benefits: PY 1991

<u>Benefits</u>	<u>Ontario-based</u>	<u>Quebec-based</u>	<u>Ratio</u>
(1)	<u>Loss Cost</u>	<u>Loss Cost</u>	<u>(3)/(2)</u>
	(2)	(3)	(4)
Income	\$143.50	\$70.38	0.49
Medical	\$ 57.86	\$36.83	0.64
Death	\$ 7.63	\$ 8.84	1.16
Funeral	\$ 0.62	\$ 0.55	0.89

As a means of reflecting the Quebec-based experience into our cost estimates, we apply the above ratios, by coverage, to our cost estimates for OMPP and TRA to arrive at Quebec-based estimates of the OMPP and TRA products. We then weight the Ontario-based estimates with the Quebec-based estimates to derive our final cost estimates for OMPP and TRA.

The weights we assign to each of the two estimates to produce our final cost estimates are selected to achieve three criteria:

- 1) The more the products under consideration are like the Quebec first party system, the more relevant is the Quebec experience and the more weight should be assigned to the Quebec-based estimates.
- 2) At one extreme, if the product we are costing is a first party system like that in Quebec, then the Ontario-based estimate and the Quebec-based estimate should receive equal weight.
- 3) At the other extreme, the Pre-OMPP full tort product, the Ontario-based estimate should receive 100% weight.

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Therefore, for our costing purposes, we assign a weight to our Ontario-based estimates equivalent to the square root of the assumed threshold/deductible penetration level (after adjustment for the effects of the accident benefits offset, collateral sources, and settlement period), and the complement of that weight to the average of the Ontario-based estimate and the Quebec-based estimate. In the case of OMPP, the weight we assign to the Ontario-based loss cost is 56.7%; for TRA it is 53.3%.

The weighting of the two estimates to arrive at our final estimate of the accident benefits loss costs for the OMPP and TRA products is presented in Exhibit AR-24. Those estimates are then combined with our estimates for the other coverages to arrive at our final comparative loss cost estimates for Pre-OMPP, OMPP, and TRA. Those estimates are presented in Exhibit AR-25.

The underlying supporting documentation for the external adjustments is presented in Appendix 9.

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Subsection 4

Subsection 4: Expenses and Profit

In this subsection provisions for expenses and profit are added to the estimated loss costs for the three products to derive estimated relative premiums.

A. Provisions for Expenses (Other Than ALAE and ULAE)

The non-claim expense provision assumptions used to estimate the required premium for each of the three products are based on information contained in the 1990 Direct Expense Report. We rely upon the 1990 Direct Expense Report because it represents the latest available compilation of Ontario automobile related expenses. In using the information in this report we make one major assumption and adjust the reported expense figures in some instances, as noted below.

A detailed examination of expenses is outside the scope of this study. For the purposes of our comparative product analysis, we make the assumption that the 1990 expense provisions, as reported in the 1990 Direct Expense Report (and subject to the adjustments described below), serve as reasonable estimates of the expenses that would be incurred by the industry in PY 1992 under all three products. That is, we assume that there will be neither improvement nor deterioration in the relative expense results from those reported for calendar year 1990.

We note that this assumption implies that there are no significant extraordinary expenses incurred by the industry in 1990 in implementing OMPP. A comparison between the 1990 Direct Expense Report with the 1989 Direct Expense Report reveals only modest changes in the reported expenses (with the exception of unallocated loss expenses, which are discussed in a separate section of this report), and so we consider this to be a reasonable assumption.

The assumption also implies that the industry will not incur any significant one-time expenses during 1992 in implementing the TRA product.

The specific expense provisions we use and the adjustments we make to the reported 1990 expenses are described below. The discussion is divided into two parts. The first addresses those expenses, such as commissions, that are assumed to vary directly with premium volume. The second deals with those expenses, such as the costs of underwriting new business applications, that are assumed to be constant on a per car basis, and are referred to in this report as fixed expenses.

1. Variable Expense Provisions

a. Commissions

Commissions are reported at 10.2% of written premium for 1990. We assume that commission expenses will continue at that level, and hence will be equal to 10.2% of premium.

b. Other Acquisition Costs

Other acquisition costs are reported at 2.9% of written premium for 1990. Based on a study performed by Mercer for the Ontario Automobile Insurance Board (OAIB) in December 1988 that indicated other acquisition expenses for private passenger automobiles are 0.2% higher than for all automobiles combined, we adjust this figure to 3.1% of premium.

c. Premium Taxes

Premium taxes are reported at 1.8% of written premium for 1990. However, this figure reflects the elimination of the premium tax with the introduction of OMPP. The premium tax has since been reinstituted and so we adjust this figure to 3.0% of premium.

2. Fixed Expenses

Consistent with the OAIB October 20, 1988 decision on automobile insurance ratemaking, we treat the expenses associated with underwriting, policy issuance, and a share of the general administration costs on a per exposure basis. That is, we treat these expenses as constant amounts that are incurred with each car insured. We also include in the expense constant a provision for estimated Ontario Insurance Commission (OIC) expenses that will be allocated to insurance companies for private passenger automobiles in 1992.

The expense constant we use is \$51. The derivation is presented in Appendix 10, Exhibits 1 and 2.

B. Profit Margin

The provisions for insurance company profit used to arrive at an estimate of the required average premium for each of the three products are derived to meet certain assumptions. Those assumptions and the reasons for them are presented below.

1. Assumptions

- The target after-tax return on equity is 11.5%.
- The combined federal and provincial income tax rate is 45%.
- The premium to surplus (leverage) ratio is 2.25 to 1.00 for all coverages combined.
- The pre-tax investment yield is 8.5%.
- The premium tax is assumed to be paid when the policy is written.
- Fifty percent of the fixed expenses and other acquisition expenses are assumed to be paid when the policy is written; the remainder of the fixed expenses and the other acquisition expenses are assumed to be paid evenly over four quarters.
- Commissions are paid when the premium is collected.
- There is an average lag in premium collection of 1.2 months (from policy issuance).
- Policies are issued for 12 month terms.
- Surplus is assumed to be held in support of the policy and loss reserves for one year.

2. Discussion

a. General

An in-depth analysis of the profit margin for insurers that write private passenger automobile insurance in Ontario in 1992 is beyond the scope of this study. It would require, among other things, a study of the risk 1) inherent in insurance as compared to that of other financial services industries, 2) inherent in automobile insurance as compared to that of other lines of insurance, 3) inherent in private passenger automobile insurance as compared to that of other categories of automobile insurance, 4) by coverage within the private passenger automobile category of insurance, 5) by each of the three products, 6) with consideration given to the past, current, and future economic/investment/tax environment, as well as 7) individual company business plans/strategies, and financial and market circumstances.

For purposes of our comparative product analysis, we derive profit margins based on assumptions that we believe provide a reasonable basis for comparing relative costs among the Pre-OMPP, OMPP, and TRA products.

With this understanding of the basis upon which the profit margins in this study are derived and the purposes which they serve, we strongly caution against extrapolating from these premium estimates any sort of "benchmark" premiums against which individual company rates are compared.

b. Target After-Tax Return on Equity

An 11.5% after-tax return on equity is selected based on a review of the average after-tax returns realized by the financial services sector in Canada over the past eight years.

During the eight year period ending 1990, the various sectors of the financial services industry realized after-tax returns ranging from 7.1% to 16.0%, averaging 11.3% in the aggregate. The insurance sector (including life and property & casualty companies) experienced a comparable return of 10.0%. All financial services sectors combined, excluding insurance, realized a return of 12.1%. Summary data, compiled for Mercer by OAIR, are found in Appendix 10, Exhibit 3.

The 11.5% target return used in this report represents an amount that (1) exceeds the observed history, but (2) is below the overall average of all sectors excluding insurance.

To illustrate the sensitivity of our conclusions to this assumption, we also show results based on target returns of 10.5% and 12.5%.

c. Tax Rate

The derivation of the assumed 45% tax rate is presented in Appendix 10, Exhibit 4.

d. Leverage Ratio

The assumed level of premium that can be supported by a given level of surplus, or equity, is based on the traditional basis for measuring required surplus levels: as a ratio to surplus. The selected premium to surplus level of 2.25 is based on a review of the premium to surplus ratios at which leading property & casualty companies/groups operated in Canada during 1989 and 1990. Summary data, compiled for Mercer by OAIR, presented in Appendix 10, Exhibit 5 provide the historical information upon which this leverage ratio is based.

Our target is to derive overall average premiums for each of the three products, not by individual coverage. Therefore the 2.25 ratio is applied to all coverages. In this manner the need to allocate the 2.25 ratio to coverage is obviated.

Sensitivity analysis is presented for leverage ratios of 2.0 and 2.5.

e. Investment Yield

The 8.5% pre-tax investment yield is based on two assumptions as follows:

- i long-range rate of inflation @ 4.5% per year, roughly comparable to the average rates experienced during the past eight years
- ii long-range real rate of return of 4% per year

Based on our review of historical results for both these assumptions, we find these assumptions to be reasonable for these purposes. Supporting summary data, compiled for Mercer by OAIR, are presented in Appendix 10, Exhibit 3.

Sensitivity analysis is presented for investment yields of 7.0% and 10.0%.

f. Timing of Expense Payments

We believe the assumptions regarding the timing of the payment of expenses are reasonable for the intended purposes. Even substantial changes in these assumptions will have a negligible effect on the overall results.

g. Premium Collection Lag

The assumed 1.2 month lag in premium collection is based on review of the average agents' balances reported by ten leading Canadian property & casualty companies/groups in their year-end 1989 and 1990 annual statements. Appendix 10, Exhibit 6, provides the historical information upon which this assumed lag is based.

h. Policy Term

For the purpose of this analysis, we assume that all private passenger non-fleet insurance policies will be issued for a term of twelve months.

i. Term of Equity Investment

We assume that, on average, an insurer must maintain the equity/surplus base in support of a policy for one year. This is reasonable in so far as a going concern takes its surplus down only to re-invest it in next year's book of business. This is a simplifying assumption necessary to remain within a premium to surplus/equity framework.

j. Use of Discounted Loss Reserves

Currently, property & casualty loss reserves are required to be established on an undiscounted basis for financial reporting purposes. That is, the full value of the losses expected to be paid, regardless of when those losses will be paid, are to be recorded by companies as a liability. For example, if \$1,000 is expected to be paid out on a claim in two years, then a reserve of \$1,000 must be established.

However, if this requirement is extended to the very long-tailed medical and income benefits coverages under OMPP and particularly TRA, where losses are expected to be paid out over a period of 20 years or more, premiums far in excess of the economic value of the expected losses would have to be charged simply to provide for the loss reserves. Ignoring the profit margin and taxes, if \$10,000 is expected to be paid 20 years from now, a reserve of \$10,000 must be established, even though the present value of that claim may be less than \$2,000.

It is our opinion that, as is the case with certain accident and health coverages written by life insurers, some degree of discounting of loss reserves for the long-tailed coverages will have to be permitted. If not,

we believe companies will achieve the effects of discounting, such as through financial reinsurance arrangements or through the use of structured settlements. There is already some anecdotal evidence that insurers are partially achieving the discounting effect on their income benefits losses under OMPP.

For this reason, and because to do otherwise would, in our opinion, distort any cost comparisons among the three products, we treat all loss costs at their true economic, or fully discounted, value.

3. Resulting Profit Margins

Pre-OMPP	\$64
OMPP	\$50
TRA	\$52

4. Sensitivity Analysis

To provide an indication of the sensitivity of the profit margins to our assumptions, we show in this section what the indicated profit margins for each of the three products would be if we were to vary certain of the key assumptions, singularly and in some extreme combinations.

MERCER

a. Premium to Surplus Ratio:

	<u>2.0</u>	<u>2.25</u>	<u>2.5</u>
		(Base)	
Pre-OMPP	\$72	\$64	\$58
OMPP	\$56	\$50	\$45
TRA	\$58	\$52	\$47

b. Target Return on Equity:

	<u>12.5%</u>	<u>11.5%</u>	<u>10.5%</u>
		(Base)	
Pre-OMPP	\$74	\$64	\$55
OMPP	\$57	\$50	\$43
TRA	\$59	\$52	\$44

c. Pre-Tax Investment Yield:

	<u>10.0%</u>	<u>8.5%</u>	<u>7.0%</u>
		(Base)	
Pre-OMPP	\$58	\$64	\$71
OMPP	\$45	\$50	\$55
TRA	\$47	\$52	\$57

MERCER

- d. Premium to Surplus Ratio of 2.5; Target Return on Equity of 10.5%; Pre-Tax Investment Yield of 10.0%

Pre-OMPP	\$44
OMPP	\$34
TRA	\$36

- e. Premium to Surplus Ratio of 2.0; Target Return on Equity of 12.5%; Pre-Tax Investment Yield of 7.0%

Pre-OMPP	\$91
OMPP	\$70
TRA	\$73

Appendix 10, Exhibit 7 provides an overview of the model we use to derive these premiums.

MERCER

C. Premium Gross-up

We now have all of the component pieces - estimated discounted loss costs, a provision of expenses, and a profit margin - needed to derive estimates of the average premiums for each of the three products. Those premium estimates are presented in Exhibit AR-26, and are summarized below.

	<u>Estimated Discounted Loss Cost</u>	<u>Expenses & Profit</u>	<u>Estimated Average Premium</u>
Pre-OMPP	\$ 775	\$ 289	\$1,064
OMPP	593	236	829
TRA	619	243	862

MERCER

Subsection 5

MERCER

Subsection 5: Comparison of Estimates

The following chart summarizes the result of our comparative cost study.

Indicated Premium (PY 92/93)

TRA	\$ 862
OMPP	\$ 829
Pre-OMPP	\$1,064

SECTION 6

SCOPE, CAVEATS AND LIMITATIONS

SECTION 7

SUPPORTING EXHIBITS

SECTION 6. SCOPE, CAVEATS AND LIMITATIONS

This section contains a combination of items that we generally designate as "scope, caveats and limitations." These are items that define the boundaries of what we do and what we don't do in this report and describe a number of elements and cautions that the reader should keep in mind while reading this report.

A. General Scope

This study focuses on the estimation of private passenger automobile insurance loss costs under three different insurance products: Pre-OMPP, OMPP, and TRA. This report compares the estimated loss costs associated with each of these products, and explains how these costs are estimated.

"Pre-OMPP" refers to the environment that existed prior to the introduction of OMPP in June 1990. In the context of this study, the Pre-OMPP environment is characterized by an unrestricted right to sue for tort damages. The OMPP product, which is currently in effect, is characterized by an increase in accident benefits coupled with a restricted right to sue for damages. The TRA product, which is proposed for implementation in 1992, is characterized by a further increase, in several ways, in accident benefits coupled with a complete tort restriction for economic damages and an absence of any tort restriction for non-economic damages, although awards for non-economic damages would be subject to a \$15,000 deductible (\$5,000 deductible for cases brought under the Family Law Act).

The proper interpretation of this report, and the validity of any conclusions drawn from it, are highly dependent on a complete understanding of the scope of this project. The scope is defined in a number of ways, as discussed below.

B. Vehicle Type

This report deals exclusively with automobile insurance for private passenger non-fleet automobiles, excluding those classified as farm use. This definition includes vehicles that are insured through the Facility Association.

This definition excludes motorcycles, commercial trucks, taxis, limousines, delivery vans, construction equipment, buses, recreational vehicles, and all other vehicle types not considered to be private passenger vehicles. Therefore, the findings contained in this report should not be extrapolated to those other vehicle types.

This definition also excludes all private passenger vehicles customarily insured on a "fleet" basis, such as private passenger automobiles leased by a business for the business use of its employees. Therefore, the findings contained in this report should not be extrapolated to private passenger vehicles written on a "fleet" basis.

Accordingly, this study does not reflect any transfer of costs that might occur between insurers of the vehicle types considered in this study and the insurers of other vehicle types.

C. Workers' Compensation Changes

In this study we do not consider the potential impact of the changes in the way that workers' compensation losses may be treated under OMPP and TRA.

D. Coverages

This analysis includes all private passenger insurance coverages with the exception of optional accident benefits coverages (available under OMPP) and the specified perils and all perils coverages.

Consideration of the optional accident benefits coverages is outside the scope of this study. Industrywide loss experience under the specified perils and all perils coverages was not available until this study was substantially completed, and hence these coverages have been excluded. The all perils and specified perils coverages account for approximately 1% of the total premiums. Also, the loss costs under these coverages are essentially the same under all three products, so their inclusion would not have a material effect on the findings.

E. Period of Coverage

The analysis of costs contained in this report is for the policy year beginning July 1, 1992 (PY 92/93).

A policy year represents a 12 month period in which insurance policies are issued. Therefore, PY 92/93 includes all policies issued from July 1, 1992 through June 30, 1993. Assuming annual policy terms (see below), the last policies, issued on June 30, 1993, would expire on June 30, 1994. Therefore PY 92/93 deals with the costs associated with the policies issued between July 1, 1992 and June 30, 1993.

F. Policy Term

For purposes of this analysis, we assume that all private passenger non-fleet insurance policies are issued for a term of twelve months.

We recognize that a number of insurers in Ontario currently issue automobile insurance policies for six month terms as well as for twelve month terms. We are not able to predict the policy terms that insurers will use after July 1, 1992. However, all companies have the option of using twelve month terms, and therefore for the purposes of this study we assume that all companies use twelve month terms.

In general the comparative costs contained in this analysis can be extrapolated to policy terms other than twelve months. However, the reader should use caution when using the absolute (as opposed to comparative) loss costs and expenses contained in this report, because they are not always consistent with insurers' current policy terms.

G. Historical Experience Period

This report is based largely on an analysis of reported Ontario private passenger automobile insurance claims experience arising from accidents that occurred prior to June 30, 1990. This experience represents, for all practical purposes, experience incurred prior to OMPP which became effective June 22, 1990. Findings regarding the costs under OMPP and under TRA are extrapolated from the loss experience incurred prior to OMPP and from analysis of the provisions of OMPP and TRA.

Statistically credible insurance industry data under OMPP are not available. The most recent industrywide compilation of experience (i.e., the combined data for virtually all insurers writing private passenger automobiles in Ontario) available at the time the study was conducted includes only the first six months of OMPP experience, valued as of December 31, 1990. Historical loss emergence patterns under OMPP are not available. Therefore, OMPP experience is too sparse and immature at this time to form the basis of an actuarial analysis. Therefore, the evaluation contained in this report should not be construed as an evaluation of actual experience under OMPP.

H. Data Sources - Historical Insurance Costs

This analysis is based largely on aggregate insurance industry data for Ontario compiled by the IBC. Although we have reviewed the IBC data for reasonableness and internal consistency, we have not audited the data.

We do have some indications that individual company data reported to the IBC may not always be correct, and that the IBC processing and compilation of company data may not always be error-free. For example, our analysis of changes in claim frequencies reveals that the IBC claim data contains the following anomaly: over the period 1985 through 1990 the frequency of funeral benefits claims has generally been increasing whereas the frequency of death benefits claims has generally been decreasing. However, the IBC is the only source of industrywide loss experience, and we believe it is reasonable to use in this analysis.

The reader should note that to the extent that the IBC data are revised and/or corrected, the conclusions contained in our report might change.

I. Data Sources - Osborne Inquiry

In estimating the cost impact of the changes to the tort liability system under OMPP and TRA, we rely heavily on the Osborne Inquiry database. The survey contains data on 1,394 closed bodily injury liability private passenger automobile claimants with claim settlement dates predominantly in 1986.

These data are used because we consider the database to be a reliable source of information regarding the distribution of claims by size and by category of damage. Although we have reviewed the data in this study for reasonableness and internal consistency, we have not audited these data. To the extent that the Osborne Inquiry database is revised, corrected, or updated, the conclusions contained in our report might change.

J. Aggregates and Averages

This analysis is based on aggregate experience of all insurers (including the Facility Association) and our findings are for loss costs and expenses, on average, for all insurers and policyholders.

The conclusions contained in this report may not be applicable to any specific insurance company. For example, each insurer operates with its own set of underwriting rules, and thus might write a book of business that is significantly different than the average industrywide book of business. We believe that our comparative costing assumptions are reasonable for the insurance industry as a whole, but do not necessarily think that they should apply to, or that they would be appropriate for, any individual insurance company.

The conclusions contained in this report may not be applicable to any specific policyholder or class of policyholders. For example, under Pre-OMPP, OMPP, and TRA, the benefits payable under income benefits are dependent on the age and occupational status of the claimant. Thus, the conclusion regarding the comparative costs of income benefits under the three insurance systems, while valid on the average for the Ontario population, would not necessarily be valid for any policyholder or class of policyholders.

Therefore, the findings contained in this report should not be extrapolated to any individual insurance company or to any individual class of policyholders.

K. Provisions For Expenses and Profit

The objectives of this study do not include the evaluation of reasonable provisions for either expenses or profit. The assumptions that we make in this study regarding provisions for expenses and profit are made solely for the purpose of developing estimated premiums for comparative purposes, and we believe that they are reasonable for this purpose -- as they are very similar to actual, observed Ontario experience.

The findings in this study should not be construed as recommendations for any specific level of insurance industry expenses or profits.

L. Actuarial Assumptions

The conclusions reached in this analysis are based on many assumptions. Some of these assumptions are based on statistical data suitable for this purpose. For example, many of the assumptions are based on analysis of the historical Pre-OMPP loss experience or on analysis of the Osborne Inquiry database.

In some cases, little or no statistical data are available for analysis and assumptions are based on professional judgment. For example, certain assumptions regarding the costs of rehabilitation services are based on discussions with rehabilitation specialists, and not on any specific Ontario claims experience.

As new information becomes available, the conclusions contained in this report may be updated.

M. Entire Document

The study conclusions are developed in the accompanying text and exhibits of Parts I, II, and III, which together comprise the report. The reader should be cognizant of all parts of the report, in order to avoid reaching incorrect conclusions.

N. Distribution

The report was prepared for the sole use of OAIR, and distribution to others without our prior written consent is unauthorized. With our consent, the report may be distributed only in its entirety.

O. Best Estimate

The caveats and limitations of this study notwithstanding, the conclusions presented in this report represent our best estimate of the relative cost of the three products: Pre-OMPP, OMPP, and TRA.

P. Unanticipated Changes

Unanticipated changes in factors such as judicial decisions, legislative actions, claim consciousness, claim management, claim settlement practices, and economic and social conditions may significantly alter the conclusions. This element of risk is always present when future costs are being estimated.

Q. Effective Date of OMPP

OMPP was introduced on June 22, 1990. Because the data aggregates we have been provided are on a half-yearly basis, we make the simplifying assumption that the accidents incurred during the first half of 1990 are all incurred prior to OMPP. This introduces a small, but nevertheless real, bit of distortion in our estimates. We make the same assumption in estimating the costs of the three products and therefore, on a relative basis, the impact on our comparisons is not material.

R. Limitation of Relevant Data

Because there is no relevant experience to rely on for the purpose of costing OMPP and TRA, we rely on alternate data sources and make the necessary adjustments to simulate the effects of OMPP and TRA. Although there is no viable alternative approach available at this time, we recognize that this could have a material impact on our conclusions.

S. Countervailing Forces

Our projections estimate the effects of fundamental system-wide changes. It should be understood that other forces, which are not incorporated in our work may arise which can affect our estimate of the effects of changes contemplated by OMPP and TRA.

T. Contingency Margin

The rate of return used in the analysis does not include any explicit margin for unanticipated contingencies. However, since the same target rate of return is used for all three products, the impact of this on the cost comparisons among the three products should not be material. Further, to the extent that the target rate of return is considered appropriate, it implicitly provides for the risk of unanticipated contingencies.

U. Data Reliance

We rely on the accuracy and completeness of the data available to complete this study (whether obtained from the IBC, the Osborne Inquiry database, published reports, or any other source) without independent audit. If the data turns out to be inaccurate or incomplete, our findings and conclusions may need to be revised. However, to the best of our knowledge, the data that we use appears reasonable for our purposes, and is the best data available.

V. Underlying Assumptions

In addition to the assumptions stated in the report, numerous other assumptions underlie the calculations and results presented herein. The reader should keep in mind that any forecast of future costs involves many assumptions, some of which may be implicit.

W. Significant Digits

Numbers in the exhibits are generally shown to more significant digits than their intrinsic accuracy would suggest. This has been done to simplify review of the calculations.

X. Items Not Reviewed

We have not conducted an independent study of appropriate target rates of return for automobile insurance, appropriate leverage factors for automobile insurance (either in the aggregate or by coverage), appropriate yields for automobile insurance companies, or appropriate expense levels for the automobile insurance industry. Rather, we rely on historical observations compiled on our behalf by OAIR that we believe are reasonable and relevant for this study.

Because the same assumptions are applied for each product, the impact on our cost comparisons should not be material.

Y. Uncertainty

Due to uncertainties inherent in the estimation of future insurance costs, it cannot be guaranteed that the loss cost estimates set forth in the report will not prove to be inadequate or excessive, and actual costs may vary significantly from our estimates. This element of risk is always present when future costs are being estimated.

Actuarial Report
Loss Development
Bodily Injury Liability (\$000's)

Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	130822	153290	175464	195471	210483	221126	227344	232641	239598	239358	240707	241783	244809	246226	246427
83-2	180864	213794	239437	267683	281903	296566	304275	313745	317494	320003	322653	324268	326274	327621	
84-1	176676	197112	223738	243375	258490	266893	276770	281652	282232	284040	288853	290292	294308		
84-2	228544	265988	290369	321378	340779	357193	362907	368338	372185	376313	380373	384549			
85-1	221631	251926	281647	303554	332461	347639	358104	366227	373468	374501	377266				
85-2	271705	319376	344708	378850	398759	419148	437086	449826	454085	459164					
86-1	231558	264952	295739	320163	345789	360648	375900	385350	395347						
86-2	304949	347521	380101	424064	448184	472490	483762	498560							
87-1	310248	340920	380749	417944	449226	462586	476955								
87-2	380179	434268	479896	517185	549861	574268									
88-1	362789	419746	464712	494059	529158										
88-2	461841	518733	565594	612313											
89-1	402074	451699	497086												
89-2	515116	581597													
90-1	404358														

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.172	1.145	1.114	1.077	1.051	1.028	1.023	1.030	0.999	1.006	1.004	1.013	1.006	1.001
83-2	1.182	1.120	1.118	1.053	1.052	1.026	1.031	1.012	1.008	1.008	1.005	1.006	1.004	
84-1	1.116	1.135	1.088	1.062	1.033	1.037	1.018	1.002	1.006	1.017	1.005	1.014		
84-2	1.164	1.092	1.107	1.060	1.048	1.016	1.015	1.010	1.011	1.011	1.011			
85-1	1.137	1.118	1.078	1.095	1.046	1.030	1.023	1.020	1.003	1.007				
85-2	1.175	1.079	1.099	1.053	1.051	1.043	1.029	1.009	1.011					
86-1	1.144	1.16	1.083	1.080	1.043	1.042	1.025	1.026						
86-2	1.140	1.094	1.116	1.057	1.054	1.024	1.031							
87-1	1.099	1.117	1.098	1.075	1.030	1.031								
87-2	1.142	1.105	1.078	1.063	1.044									
88-1	1.157	1.107	1.063	1.071										
88-2	1.123	1.090	1.083											
89-1	1.123	1.100												
89-2	1.129													

Average Link Ratios:

Latest 6 Ex. H/L	1.129
All Periods	1.143
Selected	1.129

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.680
All Periods	1.725
Selected	1.680

Actuarial Report
Calculation of Annual Ultimate Loss Link Ratios
Bodily Injury Liability

Exhibit AR-2
Page 1 of 1

<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$327,621,490	1.001	\$327,949,111
84-1	294,307,562	1.006	296,073,407
84-2	384,549,016	1.019	391,855,447
85-1	377,265,747	1.024	386,320,125
85-2	459,163,560	1.033	474,315,957
86-1	395,347,375	1.040	411,161,270
86-2	498,560,254	1.054	525,482,508
87-1	476,954,780	1.079	514,634,208
87-2	574,267,785	1.114	639,734,312
88-1	529,157,510	1.165	616,468,499
88-2	612,313,479	1.243	761,105,654
89-1	497,085,959	1.350	671,066,045
89-2	581,597,097	1.488	865,416,480
90-1	404,358,072	1.680	679,321,561

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	621,929,052	624,022,519	1.003
1985	761,814,763	778,175,572	1.021
1986	854,510,935	885,477,227	1.036
1987	975,515,034	1,040,116,715	1.066
1988	1,103,425,295	1,256,202,812	1.138
1989	1,109,399,438	1,432,171,699	1.291
1990	985,955,169	1,544,738,041	1.567

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit AR-1, Page 1.
- (3) Selected cumulative link ratio from Exhibit AR-1, Page 1.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in column (4).
- (8) Column (7) divided by Column (6).

Actuarial Report
Loss Cost Trend Calculation
Bodily Injury Liability

Exhibit AR-3
Page 1 of 1

Accident Year	Exposure (1)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	3,190,759	\$162,569	\$50.95	---		\$228,375	1.000	\$228,375	\$71.57	---	
1979	3,346,970	160,871	48.06	-5.7%		296,934	1.000	296,934	88.72	24.0%	
1980	3,447,950	180,823	52.44	9.1%		372,762	1.000	372,762	108.11	21.9%	
1981	3,473,173	180,274	51.90	-1.0%		397,456	1.000	397,456	114.44	5.9%	
1982	3,500,911	186,197	53.18	2.5%		450,529	1.000	450,529	128.69	12.5%	
1983	3,550,812	216,113	60.86	14.4%		509,387	1.000	509,387	143.46	11.5%	
1984	3,694,094	302,471	81.88	34.5%		621,929	1.003	623,795	168.86	17.7%	
1985	3,821,327	377,063	98.67	20.5%		761,815	1.021	777,813	203.55	20.5%	10%
1986	3,973,939	431,253	108.52	10.0%	10%	854,511	1.036	885,273	222.77	9.4%	10%
1987	4,097,975	522,830	127.58	17.6%	15%	975,515	1.066	1,039,899	253.76	13.9%	15%
1988	4,269,674	642,554	150.49	18.0%	20%	1,103,425	1.138	1,255,698	294.10	15.9%	20%
1989	4,476,849	757,268	169.15	12.4%	25%	1,109,399	1.291	1,432,234	319.92	8.8%	25%
1990	4,626,219	813,096	175.76	3.9%	30%	985,955	1.567	1,544,991	333.96	4.4%	30%

5 Year Weighted Change:

Latest 12 Year Fitted Change:

Latest 5 Year Fitted Change:

Selected Change:

9.7%
13.9%
11.0%
9.8%

Actuarial Report
Calculation of the Discounted Weighted Average Loss Costs

Accident Year Ended	Bodily Injury Liability (1)	Accident Benefits					Uninsured Underinsured		Property Damage (9)
		Income (2)	Medical (3)	Death (4)	Funeral (5)	Quebec (6)	Motorist (7)	Motorist (8)	
6/30/89	\$319.92	\$19.26	\$12.51	\$1.05	\$0.19	\$0.17	\$20.36	\$6.12	\$94.12
6/30/90	333.96	21.43	15.72	1.15	0.20	0.42	21.79	4.06	97.37
Weighted 30/70:	329.75	20.78	14.76	1.12	0.20	0.35	21.36	4.68	96.40
Discount factor:	0.727	0.829	0.829	0.920	0.931	0.727	0.749	0.727	0.932
Discounted Loss Cost:	239.73	17.23	12.23	1.03	0.18	0.25	16.00	3.40	89.84

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Accident Year Ended:	Collision		Weighted Average of Deductible (10) and (11)	Comprehensive		
	\$100 Deductible (10)	\$200+ Deductible (11)		\$25 Deductible (13)	\$50 Deductible (14)	All Deductibles (15)
6/30/89	\$113.52	\$157.31		\$38.08	\$52.10	\$51.55
6/30/90	118.18	162.33		43.13	61.29	59.57
Weighted 30/70:	116.78	160.82		41.62	58.53	57.16
Discount factor:	0.960	0.960		0.947	0.947	0.947
Discounted Loss Cost:	112.11	154.39	141.47	39.41	55.43	54.13

Actuarial Report
Sensitivity Analysis of the 30%/70% Weighting Procedure

Exhibit AR-5
Page 1 of 1

Accident Year Ended:	Bodily Injury Liability (1)	Accident Benefits					Uninsured Underinsured Property		
		Income (2)	Medical (3)	Death (4)	Funeral (5)	Quebec (6)	Motorist (7)	Motorist (8)	Damage (9)
6/30/89	\$319.92	\$19.26	\$12.51	\$1.05	\$0.19	\$0.17	\$20.36	\$6.12	\$94.12
6/30/90	333.96	\$21.43	\$15.72	\$1.15	\$0.20	\$0.42	\$21.79	\$4.06	\$97.37
Weighted									
20/80:	331.15	21.00	15.08	1.13	0.20	0.37	21.50	4.47	96.72
30/70:	329.75	20.78	14.76	1.12	0.20	0.35	21.36	4.68	96.40
40/60:	328.34	20.56	14.44	1.11	0.20	0.32	21.22	4.88	96.07
50/50:	326.94	20.35	14.12	1.10	0.20	0.30	21.08	5.09	95.75
Accident Year Ended:	Collision Deductible (10)	\$100 Deductible (11)	Weighted Average of Deductible (10) and (11) (12)	Comprehensive					
				\$25 Deductible (13)	\$50 Deductible (14)	All Deductibles (15)			
6/30/89	\$113.52	\$157.31	\$143.93	\$38.08	\$52.10	\$51.55			
6/30/90	\$118.18	\$162.33	148.84	\$43.13	\$61.29	59.57			
Weighted									
20/80:	117.25	161.33	147.85	42.12	59.45	57.97			
30/70:	116.78	160.82	147.36	41.62	58.53	57.16			
40/60:	116.32	160.32	146.87	41.11	57.61	56.36			
50/50:	115.85	159.82	146.38	40.61	56.70	55.56			

Actuarial Report

Calculation of Discount Factor

Third Party Liability - Bodily Injury Liability, Uninsured Motorist -
Bodily Injury Liability, Underinsured Motorist, Quebec Benefits

Exhibit AR-6

Page 1 of 1

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	4.0%	0.5	0.960	3.8%
2	14.0%	1.5	0.885	12.4%
3	18.2%	2.5	0.816	14.8%
4	16.8%	3.5	0.752	12.6%
5	15.4%	4.5	0.693	10.7%
6	12.7%	5.5	0.638	8.1%
7	8.6%	6.5	0.588	5.1%
8	5.0%	7.5	0.542	2.7%
9	2.6%	8.5	0.500	1.3%
10	1.3%	9.5	0.461	0.6%
11	0.7%	10.5	0.425	0.3%
12	0.3%	11.5	0.391	0.1%
13	0.2%	12.5	0.361	0.1%
14	0.1%	13.5	0.332	0.0%
TOTAL	100.0%	--	--	72.7%

Average Discount Factor = 0.727

Notes:

(2) From Appendix 2, Exhibit 1, Page 1.

(3) Assumes payments are made evenly throughout the year.

(4) $1/[1.085]^n$ * Column (3).

(5) Column (2) x Column (4).

For reasons of credibility, the bodily injury liability discount factor is assumed to be applicable for uninsured motorist - bodily injury, underinsured motorist, and Quebec benefits.

Actuarial Report
Interest Rate for Discounting
Sensitivity Analysis

Exhibit AR-7
Page 1 of 1

Coverage	Interest Rate		
	7.0%	8.5%	10.0%
	Overall Discount Factor		
	+ x%		- y%
Bodily Injury Liability	5.4%	Base	5.0%
Income Benefits	2.9%	Base	2.9%
Medical Benefits	3.0%	Base	3.0%
Death Benefits	0.6%	Base	2.1%
Funeral Benefits	1.3%	Base	1.1%
Quebec Benefits	3.8%	Base	3.5%
Uninsured Motorists	5.8%	Base	5.2%
Underinsured Motorists	5.4%	Base	5.0%
Property Damage	1.3%	Base	1.1%
Collision	0.7%	Base	0.6%
Comprehensive	0.8%	Base	1.0%
Overall	3.4%	Base	3.2%

Actuarial Report
Claim Frequency Trend Calculation
Bodily Injury Liability

Exhibit AR-8
Page 1 of 3

Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1978	3,190,759	31,544	0.9886	---		30,994	1.000	30,994	0.9714	---	
1979	3,346,970	30,811	0.9206	-6.9%		28,997	1.000	28,997	0.8664	-10.8%	
1980	3,447,950	30,704	0.8905	-3.3%		30,335	1.000	30,335	0.8798	1.5%	
1981	3,473,173	31,511	0.9073	1.9%		30,791	1.000	30,791	0.8865	0.8%	
1982	3,500,941	28,794	0.8225	-9.3%		30,027	1.000	30,027	0.8577	-3.2%	
1983	3,550,812	30,048	0.8462	2.9%		30,569	1.000	30,569	0.8609	0.4%	
1984	3,694,094	35,308	0.9558	13.0%		34,204	0.999	34,170	0.9250	7.4%	
1985	3,821,327	39,319	1.0289	7.6%		40,046	0.996	39,886	1.0438	12.8%	
1986	3,973,939	42,705	1.0746	4.4%	10%	43,321	0.989	42,844	1.0781	3.3%	10%
1987	4,097,975	45,862	1.1191	4.1%	15%	46,599	0.975	45,434	1.1087	2.8%	15%
1988	4,269,674	52,337	1.2258	9.5%	20%	53,704	0.954	51,234	1.2000	8.2%	20%
1989	4,476,849	54,605	1.2197	-0.5%	25%	57,175	0.942	53,859	1.2031	0.3%	25%
1990	4,626,219	55,613	1.2021	-1.4%	30%	56,605	0.931	52,699	1.1391	-5.3%	30%

Actuarial Report
Claim Severity Trend Calculation
Bodily Injury Liability

Exhibit AR-8
Page 2 of 3

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurral Losses at 12 Months (\$'000) (2)	Incurral Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$'000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1978	\$162,569	31,544	\$5,154	---		\$228,375	30,994	\$7,368		
1979	160,871	30,811	5,221	1.3%		296,934	28,997	10,240	39.0%	
1980	180,823	30,704	5,889	12.8%		372,762	30,335	12,288	20.0%	
1981	180,274	31,511	5,721	-2.9%		397,456	30,791	12,908	5.0%	
1982	186,197	28,794	6,467	13.0%		450,529	30,027	15,004	16.2%	
1983	216,113	30,048	7,192	11.2%		509,387	30,569	16,664	11.1%	
1984	302,471	35,308	8,567	19.1%		623,795	34,170	18,256	9.6%	
1985	377,063	39,319	9,590	11.9%		777,813	39,886	19,501	6.8%	
1986	431,253	42,705	10,098	5.3%	10%	885,273	42,844	20,663	6.0%	10%
1987	522,830	41,862	11,400	12.9%	15%	1,039,899	45,434	22,888	10.8%	15%
1988	642,554	52,337	12,277	7.7%	20%	1,255,698	51,234	24,509	7.1%	20%
1989	757,268	54,605	13,868	13.0%	25%	1,432,234	53,859	26,592	8.5%	25%
1990	813,096	55,613	14,621	5.4%	30%	1,544,991	52,699	29,317	10.2%	30%

Actuarial Report
Loss Cost Trend Calculation
Bodily Injury Liability

Exhibit AR-8
Page 3 of 3

Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	3,190,759	\$162,569	\$50.95			\$228,375	1.000	\$228,375	\$71.57		
1979	3,346,970	160,871	48.06	-5.7%		296,934	1.000	296,934	88.72	24.0%	
1980	3,447,950	180,823	52.44	9.1%		372,762	1.000	372,762	108.11	21.9%	
1981	3,473,173	180,274	51.90	-1.0%		397,456	1.000	397,456	114.44	5.9%	
1982	3,500,941	186,197	53.18	2.5%		450,529	1.000	450,529	128.69	12.5%	
1983	3,550,812	216,113	60.86	14.4%		509,387	1.000	509,387	143.46	11.5%	
1984	3,694,094	302,471	81.88	34.5%		621,929	1.003	623,795	168.86	17.7%	
1985	3,821,327	377,063	98.67	20.5%		761,815	1.021	777,813	203.55	20.5%	
1986	3,973,939	431,253	108.52	10.0%	10%	854,511	1.036	885,273	222.77	9.4%	10%
1987	4,097,975	522,830	127.58	17.6%	15%	975,515	1.066	1,039,899	253.76	13.9%	15%
1988	4,269,674	642,554	150.49	18.0%	20%	1,103,425	1.138	1,255,698	294.10	15.9%	20%
1989	4,476,849	757,268	169.15	12.4%	25%	1,109,399	1.291	1,432,234	319.92	8.8%	25%
1990	4,626,219	813,096	175.76	3.9%	30%	985,955	1.567	1,544,991	333.96	4.4%	30%
5 Year Weighted Change:											
Latest 12 Year Fitted Change:											
Latest 5 Year Fitted Change:											
Selected Change:											

5 Year Weighted Change:
Latest 12 Year Fitted Change:
Latest 5 Year Fitted Change:

Selected Change:

Note: Identical to Exhibit AR-3

William M. Mercer Limited

Actuarial Report
Long-Term Trend Selections

Exhibit AR-9
Page 1 of 1

	Bodily Injury Liability (1)	Accident Benefits				Uninsured Underinsured Property			
		Income (2)	Medical (3)	Death (4)	Funeral (5)	Quebec (6)	Motorist (7)	Motorist (8)	Damage (9)
Annual									
Long-Term									
Trend:									
Frequency	0.9%	3.8%	3.0%	0.9%	0.9%	0.0%	11.0%	-2.5%	-4.0%
Severity	8.8%	5.7%	19.1%	0.0%	0.0%	5.0%	9.0%	2.4%	11.9%
Loss Cost	9.8%	9.7%	22.7%	0.9%	0.9%	5.0%	21.0%	-0.2%	7.4%
		Collision		Comprehensive					
		\$100 Deductible (10)	\$200+ Deductible (11)	\$25 Deductible (12)	\$50 Deductible (13)				
Annual									
Long-Term									
Trend:									
Frequency	-4.8%			1.3%	0.9%				
Severity	11.1%			3.9%	5.2%				
Loss Cost	5.8%			5.3%	6.1%				

Actuarial Report
Impact of Recession
On Frequency Trends

Exhibit AR-10
Page 1 of 3

12 Months Ended	Actual BI Claim Frequency	Expected BI Claim Frequency	Ratio (2)/(3)	Actual PD Claim Frequency	Expected PD Claim Frequency	Ratio (5)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6/30/81	0.888	0.888	1.000	5.912	5.912	1.000
6/30/82	0.859	0.921	0.933	5.504	5.676	0.970
6/30/83	0.862	0.955	0.903	4.518	5.448	0.829
6/30/84	0.924	0.990	0.933	4.742	5.231	0.907
6/30/85	1.044	1.027	1.017	4.982	5.021	0.992

Notes:

Column (3) reflects long-term annual trend of +3.7%

Column (6) reflects long-term annual trend of -4.0%

Conclusions: The BI frequency recovered to its long term trend line in about 3.5 years. The PD frequency recovered to its long-term trend line in about 4 years.

Actuarial Report
Impact of Recession
On Frequency Trends

Exhibit AR-10
Page 2 of 3

12 Months Ended	Actual Collision Claim Frequency	Expected Collision Claim Frequency	Ratio (2)/(3)	Actual Comp- rehensive Claim Frequency	Expected Comp- rehensive Claim Frequency	Ratio (5)/(6)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
6/30/81	7.89	7.89	1.000	8.97	8.97	1.000
6/30/82	7.99	7.83	1.021	10.01	8.97	1.116
6/30/83	6.43	7.76	0.828	14.07	8.97	1.569
6/30/84	6.60	7.70	0.857	13.80	8.97	1.538
6/30/85	7.48	7.64	0.979	12.43	8.97	1.386
6/30/86	7.61	7.58	1.004	9.65	8.97	1.076

Notes:

Column (3) reflects long-term annual trend of -0.8%

Column (6) reflects long-term annual trend of 0.0%

Conclusion: the Collision and Comprehensive frequency trends recovered to the long-term trend lines in about five years.

Actuarial Report
Impact of Recession
Frequency Trends

Exhibit AR-10
Page 3 of 3

12 Months <u>Ended</u> (1)	Actual Accident Benefits <u>Frequency</u> (2)	Expected Accident Benefits <u>Frequency</u> (3)	Ratio <u>(2)/(3)</u> (4)
6/30/81	1.26	1.26	1.000
6/30/82	1.11	1.32	0.841
6/30/83	1.00	1.38	0.724
6/30/84	1.08	1.45	0.747
6/30/85	1.24	1.51	0.819
6/30/86	1.28	1.59	0.807

Notes:

Column (3) reflects long-term annual trend of +4.7%

Actuarial Report
Calculation of Filing Trend
Bodily Injury Liability

Exhibit AR-11
Page 1 of 1

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.8%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	2.4%	1.065
Technical End of Recession	05/15/91		1.090
Hit Bottom	11/13/91	12.7%	1.102
Midpoint of Filing	07/01/93		1.340
End of Recovery	11/12/95		1.780
Filing trend:			8.0%

Actuarial Report
Calculation of Baseline Loss Costs
(Application of the Trend Factor, ULAE Factor, and GST Factor)

	Bodily Injury Liability (1)	Accident Benefits					Uninsured Underinsured Property		
		<u>Income</u> (2)	<u>Medical</u> (3)	<u>Death</u> (4)	<u>Funeral</u> (5)	<u>Quebec</u> (6)	<u>Motorist</u> (7)	<u>Motorist</u> (8)	<u>Damage</u> (9)
(1) Discounted Loss Cost:	\$239.73	\$17.23	\$12.23	\$1.03	\$0.18	\$0.25	\$16.00	\$3.40	\$89.84
(2) Annual Loss Cost Trend:	8.0%	3.5%	15.8%	-4.8%	-4.8%	-0.9%	14.1%	-5.2%	4.3%
(3) Length of Trend (Years)	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
(4) Trended Loss Cost:	\$321.16	\$19.63	\$21.36	\$0.85	\$0.15	\$0.24	\$26.41	\$2.78	\$105.43
(5) ULAE Factor	1.067	1.067	1.067	1.067	1.067	1.067	1.067	1.067	1.067
(6) GST Factor:	1.014	1.015	1.009	1.004	1.069	1.009	1.017	1.014	1.043
(7) Baseline Loss Cost:	\$347.48	\$21.26	\$23.00	\$0.92	\$0.17	\$0.26	\$28.66	\$3.00	\$117.33

Actuarial Report
 Calculation of Baseline Loss Costs
 (Application of the Trend Factor, ULAE Factor, and GST Factor)

Exhibit AR-12
 Page 2 of 2

	<u>Collision</u>		Weighted Average of (1) and (2) (3)	<u>Comprehensive</u>		
	<u>\$100 Deductible (1)</u>	<u>\$200+ Deductible (2)</u>		<u>\$25 Deductible (4)</u>	<u>\$50 Deductible (5)</u>	<u>All Deductibles (6)</u>
(1) Discounted Loss Cost:	\$112.11	\$154.39		\$39.41	\$55.43	\$54.13
(2) Annual Loss Cost Trend:	2.8%	5.4%		9.4%	10.3%	10.1%
(3) Length of Trend (Years)	3.8	3.8		3.8	3.8	3.8
(4) Trended Loss Cost:	\$124.51	\$188.55		\$55.45	\$80.45	\$78.13
(5) ULAE Factor	1.067	1.067		1.067	1.067	1.067
(6) GST Factor:	1.043	1.043		1.043	1.043	1.043
(7) Baseline Loss Cost:	\$138.57	\$209.83	\$188.05	\$61.70	\$89.53	\$86.94

Actuarial Report
Calculation of Filing Trend
Sensitivity Analysis of Recession Adjustment

Exhibit AR-13
Page 1 of 2

Percentage Change in Loss Costs

Bodily Injury Liability				
Depth	Recovery Period (Years)			
	3.5	4.5	5.5	
0.8750	0%	-2%	-3%	
0.9000	1%	BASELINE	-1%	
0.9250	3%	2%	1%	

Income Benefits				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	9%	6%	5%	

Medical Benefits				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	8%	6%	5%	

Medical Benefits Frequency				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.65	-3%	-7%	-9%	
0.72	3%	BASELINE	-2%	
0.79	8%	6%	5%	

Death Benefits				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	9%	7%	5%	

Funeral Benefits				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	9%	7%	5%	

Quebec Benefits				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	9%	7%	5%	

Uninsured Motorist				
Depth	Recovery Period (Years)			
	4.5	5.5	6.5	
0.6500	-3%	-7%	-9%	
0.7200	3%	BASELINE	-2%	
0.7900	9%	6%	5%	

Underinsured Motorist				
Depth	Recovery Period (Years)			
	3.5	4.5	5.5	
0.6500	0%	-6%	-9%	
0.7200	5%	BASELINE	-3%	
0.7900	9%	6%	4%	

Note: This displays the percentage differences in estimated loss costs resulting from alternative assumptions regarding the extent to which claim frequencies are affected by the recession and the length of the recovery period. The percentages express differences from the baseline assumptions; for example, in the case of bodily injury liability, the assumption of a 5.5 year recovery period, and a 0.8750 "depth" of the recession, would result in loss costs that are 3% lower than the loss cost estimate we choose as our baseline in this report.

Actuarial Report
Calculation of Filing Trend
Sensitivity Analysis of Recession Adjustment

Exhibit AR-13
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Percentage Change in Loss Costs

Property Damage			
	Recovery Period (Years)		
Depth	3.5	4.5	5.5
0.7875	0%	-3%	-5%
0.8300	3% BASELINE		-1%
0.8725	5%	3%	2%

Collision (\$100 Deductible)			
	Recovery Period (Years)		
Depth	3.5	4.5	5.5
0.7875	0%	-3%	-5%
0.8300	3% BASELINE		-1%
0.8725	5%	3%	2%

Collision (\$200 and Higher Deductibles)			
	Recovery Period (Years)		
Depth	3.5	4.5	5.5
0.7875	0%	-3%	-5%
0.8300	3% BASELINE		-2%
0.8725	5%	3%	2%

Comprehensive (\$25 Deductible)			
	Recovery Period (Years)		
Depth	3.5	4.5	5.5
1.2100	-6%	-3%	-2%
1.2800	-3% BASELINE		2%
1.3500	-1%	3%	6%

Comprehensive (\$50 Deductible)			
	Recovery Period (Years)		
Depth	3.5	4.5	5.5
1.2100	-6%	-3%	-2%
1.2800	-3% BASELINE		2%
1.3500	-1%	3%	6%

See note on Page 1.

Actuarial Report
Comparison of Ontario Loss Cost Trends
With Quebec Loss Cost Trends

Exhibit AR-14
Page 1 of 1

Quebec Loss Cost Trends
(Personal Injury Coverages)

Year	Number of Registered Vehicles	Total Costs (\$Millions)	Cost Per Vehicle
(1)	(2)	(3)	(4)
1978	2,951,387	263	89.11
1979	2,933,678	277	94.42
1980	3,038,755	297	97.74
1981	3,172,056	356	112.23
1982	3,071,112	335	109.08
1983	3,135,833	376	119.90
1984	3,202,487	421	131.46
1985	3,281,026	528	160.93
1986	3,467,153	520	149.98
1987	3,650,242	570	156.15
1988	3,765,335	532	141.29
1989	3,884,080	560	144.18
1990	3,986,977	616	154.50

Annual rate of change over period: +5.0%

Ontario Loss Cost Trends
(Medical and Disability Benefits)

	Medical Benefits	Income Benefits	
Accident Year			
1989/1990 Incurred Losses (\$000)	\$71,990	\$98,147	
Long-Term Annual Trend in Loss Costs	22.7%	9.7%	15.2%

Conclusion: Ontario loss cost trend exceeds the Quebec loss cost trend by approximately 10.2%

Actuarial Report
Calculation of Filing Trend
Income Benefits

Exhibit AR-15
Page 1 of 1

Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Start Of OMPP	06/22/90	-13.2%	1.050
Technical End of Recession	05/15/91		0.925
Hit Bottom	11/13/91	15.9%	0.862
Midpoint of Filing	07/01/93		1.096
End of Recovery	11/11/96		1.800
Filing trend:			2.5%

Actuarial Report

Calculation of Adjusted Baseline Loss Costs for OMPP

(Application of the Trend Factor, ULAE Factor, and GST Factor)

Exhibit AR-16
Page 1 of 2

	Bodily Injury Liability (1)	Accident Benefits					Uninsured Underinsured Property		
		Income (2)	Medical (3)	Death (4)	Funeral (5)	Quebec (6)	Motorist (7)	Motorist (8)	Damage (9)
(1) Discounted									
Loss Cost:									
(2) Annual Loss	\$239.73	\$17.23	\$12.23	\$1.03	\$0.18	\$0.25	\$16.00	\$3.40	\$89.84
Cost Trend:	8.0%	2.5%	14.7%	-4.8%	-4.8%	-0.9%	14.1%	-5.2%	4.3%
(3) Length of									
Trend (Years):	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
(4) Trended									
Loss Cost:	\$321.16	\$18.92	\$20.60	\$0.85	\$0.15	\$0.24	\$26.41	\$2.78	\$105.43
(5) ULAE Factor	1.076	1.076	1.076	1.076	1.076	1.076	1.076	1.076	1.076
(6) GST Factor:	1.014	1.014	1.009	1.003	1.069	1.009	1.017	1.014	1.043
(7) OMPP									
Adjusted Baseline									
Loss Cost:	\$350.41	\$20.64	\$22.37	\$0.92	\$0.17	\$0.26	\$28.90	\$3.03	\$118.32

Actuarial Report
Calculation of Adjusted Baseline Loss Costs for OMPP
(Application of the Trend Factor, ULAE Factor, and GST Factor)

	Collision		Weighted Average of (1) and (2)	Comprehensive		
	\$100 Deductible (1)	\$200 Deductible (2)		\$25 Deductible (4)	\$50 Deductible (5)	All Deductibles (6)
(1) Discounted Loss Cost:	\$112.11	\$154.39		\$39.41	\$55.43	\$54.13
(2) Annual Loss Cost Trend:	2.8%	5.4%		9.4%	10.3%	10.1%
(3) Length of Trend (Years):	3.8	3.8		3.8	3.8	3.8
(4) Trended Loss Cost:	\$124.51	\$188.55		\$55.45	\$80.45	\$78.13
(5) ULAE Factor:	1.076	1.076		1.076	1.076	1.076
(6) GST Factor:	1.043	1.043		1.043	1.043	1.043
(7) OMPP Adjusted Baseline Loss Cost:	\$139.74	\$211.60	\$189.64	\$62.22	\$90.29	\$87.68

Actuarial Report
Calculation of Filing Trend
Income Benefits

Exhibit AR-17
Page 1 of 1

Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Start Of OMPP	06/22/90	-13.2%	1.050
Technical End of Recession	05/15/91		0.925
Hit Bottom	11/13/91	15.9%	0.862
Filing Effective Date	07/01/92	14.6%	0.946
Start Safety Programs	01/01/93	9.5%	1.014
Midpoint of Filing	07/01/93		1.060
End of Recovery	11/11/96		1.438
Filing trend:			1.5%

Actuarial Report
 Calculation of Adjusted Baseline Costs for TRA
 (Application of the Trend Factor, ULAE Factor, and GST Factor)

Exhibit AR-18
 Page 1 of 2

	Bodily Injury Liability	Accident Benefits					Uninsured Underinsured		
		Income	Medical	Death	Funeral	Quebec	Motorist	Motorist	Property Damage
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
(1) Discounted									
Loss Cost:	\$239.73	\$17.23	\$12.23	\$1.03	\$0.18	\$0.25	\$16.00	\$3.40	\$89.84
(2) Annual Loss									
Cost Trend:	7.4%	1.5%	13.8%	-5.4%	-5.4%	-1.5%	13.6%	-5.8%	3.7%
(3) Length of									
Trend (Years):	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8
(4) Trended									
Loss Cost:	\$314.44	\$18.23	\$19.99	\$0.83	\$0.15	\$0.24	\$25.97	\$2.71	\$103.14
(5) ULAE Factor	1.076	1.076	1.076	1.076	1.076	1.076	1.076	1.076	1.076
(6) GST Factor:	1.012	1.014	1.009	1.003	1.069	1.009	1.015	1.012	1.043
(7) TRA									
Adjusted Baseline									
Loss Cost:	\$342.39	\$19.89	\$21.71	\$0.90	\$0.17	\$0.26	\$28.37	\$2.95	\$115.75

Actuarial Report
Calculation of Adjusted Baseline Costs for TRA
(Application of the Trend Factor, ULAE Factor, and GST Factor)

	<u>Collision</u>		<u>Weighted Average of (1) and (2)</u>	<u>Comprehensive</u>		
	<u>\$100 Deductible</u> (1)	<u>\$200+ Deductible</u> (2)		<u>\$25 Deductible</u> (4)	<u>\$50 Deductible</u> (5)	<u>All Deductibles</u> (6)
(1) Discounted Loss Cost:	\$112.11	\$154.39		\$39.41	\$55.43	\$54.13
(2) Annual Loss Cost Trend:	2.2%	4.8%		9.4%	10.3%	10.1%
(3) Length of Trend (Years):	3.8	3.8		3.8	3.8	3.8
(4) Trended Loss Cost:	\$121.78	\$184.50		\$55.45	\$80.45	\$78.13
(5) ULAE Factor	1.076	1.076		1.076	1.076	1.076
(6) GST Factor:	1.043	1.043		1.043	1.043	1.043
(7) TRA Adjusted Baseline Loss Cost:	\$136.66	\$207.06	\$185.54	\$62.22	\$90.29	\$87.68

Actuarial Report
Breakdown of Award/Settlement
Bodily Injury Claims (Excluding ALAE)

Exhibit AR-19
Page 1 of 1

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Economic			
Pure Loss	28.3%	36.9%	0.0%
FLA	1.5%	3.6%	0.0%
Party and Party	3.9%	4.6%	0.0%
Prejudgment Interest	<u>3.0%</u>	<u>3.6%</u>	<u>0.0%</u>
Total Economic	36.7%	48.7%	0.0%
Non-economic			
Pure Loss	47.5%	34.3%	71.9%
FLA	3.2%	6.1%	5.9%
Party and Party	8.0%	5.9%	12.9%
Prejudgment Interest	<u>4.6%</u>	<u>5.0%</u>	<u>9.3%</u>
Total Non-economic	63.3%	51.3%	100.0%

The figures above result from Mercer's adjustments to the Osborne Inquiry bodily injury database, prior to any consideration of the effects of the accident benefits offset or the collateral benefits offset. Refer to bodily injury discussion in Section 5, Subsection 2 for description of methodology.

Actuarial Report
Calculation of Pre-OMPP Weekly
Income Replacement Benefits

Exhibit AR-20
Page 1 of 1

1989 Estimated Annual Income	Estimated Income Distribution	7/1/93 Estimated Annual Income	7/1/93 Estimated Weekly Income	Estimated CPP Disability Pension	Pre-OMPP Weekly Income Replacement Benefits		
					With No Offsets	Private Offset Only	Private And CPP Offsets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,789	\$34.40	\$75.10	\$27.52	\$27.52	\$13.76
3,200	5.8%	3,816	73.39	80.95	58.71	58.71	29.35
5,200	5.1%	6,201	119.25	87.83	95.40	95.40	51.49
7,200	4.7%	8,586	165.12	94.71	132.09	62.74	43.80
9,200	4.0%	10,971	210.98	101.59	140.00	68.66	54.10
11,200	3.9%	13,356	256.85	108.47	140.00	71.41	62.81
14,000	6.1%	16,695	321.06	118.10	140.00	75.26	75.01
18,000	9.7%	21,465	412.79	131.86	140.00	80.77	80.77
23,000	11.3%	27,428	527.46	149.06	140.00	87.65	87.65
28,000	9.3%	33,391	642.13	157.70	140.00	94.53	94.53
36,000	14.9%	42,931	825.59	157.70	140.00	105.54	105.54
47,458	5.2%	56,595	1,088.37	157.70	140.00	121.30	121.30
53,850	3.9%	64,217	1,234.93	157.70	140.00	130.10	130.10
60,185	2.7%	71,771	1,380.22	157.70	140.00	138.81	138.81
66,127	2.1%	78,858	1,516.50	157.70	140.00	140.00	140.00
73,864	2.0%	88,084	1,693.93	157.70	140.00	140.00	140.00
85,357	0.8%	101,790	1,957.50	157.70	140.00	140.00	140.00
98,980	0.4%	118,036	2,269.92	157.70	140.00	140.00	140.00
115,743	0.2%	138,026	2,654.35	157.70	140.00	140.00	140.00
126,956	0.1%	151,397	2,911.49	157.70	140.00	140.00	140.00
157,174	0.2%	187,433	3,604.48	157.70	140.00	140.00	140.00
202,361	0.1%	241,319	4,640.75	157.70	140.00	140.00	140.00
244,240	0.1%	291,261	5,601.17	157.70	140.00	140.00	140.00
319,757	0.0%	381,316	7,333.00	157.70	140.00	140.00	140.00
515,529	0.1%	614,778	11,822.66	157.70	140.00	140.00	140.00
\$26,776		\$31,931	\$614.06	\$130.72			

Estimated Weekly Average Income Benefits	\$124.54	\$89.39	\$82.63
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Notes by Column:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with four years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) Calculated as 75% of the CPP retirement pension plus \$69.94.
- (6) 80% of column (4), subject to a maximum of \$140.
- (7) Column (6) reduced for benefits payable under private income benefits plans.
- (8) Column (6) reduced for benefits payable under private income benefits and CPP disability plans.

Actuarial Report
Total Income Benefits Costs - Pre-OMPP

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590	1.0000	\$17.79	\$22,997,023	\$10.00	\$12,925,900
	2	0.005	1,182,720	1.0000	17.79	21,042,278	10.00	11,827,200
	3	0.008	1,135,411	1.0000	17.79	20,200,584	10.00	11,354,110
	4	0.011	1,095,672	1.0000	17.79	19,493,570	10.00	10,956,720
	5	0.014	1,062,802	1.0000	17.79	18,908,766	10.00	10,628,020
	6	0.016	1,036,231	1.0000	17.79	18,436,030	10.00	10,362,310
	7	0.019	1,015,507	1.0000	17.79	18,067,320	10.00	10,155,070
	8	0.022	1,000,000	1.0000	17.79	17,791,429	10.00	10,000,000
	9	0.025	988,169	0.9998	17.79	17,576,984	10.00	9,879,467
	10	0.027	975,780	0.9996	17.79	17,352,736	10.00	9,753,425
	11	0.030	962,743	0.9993	17.79	17,117,067	10.00	9,620,963
	12	0.033	948,956	0.9991	17.79	16,868,171	10.00	9,481,066
	13	0.036	934,311	0.9989	17.79	16,604,137	10.00	9,332,661
	14	0.038	918,747	0.9987	17.79	16,323,892	10.00	9,175,144
	15	0.041	902,351	0.9984	12.77	11,504,991	10.00	9,009,390
	16	0.044	885,441	0.9982	12.77	11,286,866	10.00	8,838,579
	17	0.047	868,503	0.9980	12.77	11,068,480	10.00	8,667,564
	18	0.049	852,015	0.9978	12.77	10,855,925	10.00	8,501,116
	19	0.052	836,290	0.9975	12.77	10,653,184	10.00	8,342,352
	20	0.055	821,406	0.9973	12.77	10,461,244	10.00	8,192,047
	21	0.058	807,271	0.9971	12.77	10,278,926	10.00	8,049,276
	22	0.060	793,766	0.9969	12.77	10,104,709	10.00	7,912,850
	23	0.063	780,876	0.9967	12.77	9,938,397	10.00	7,782,613
	24	0.066	768,734	0.9964	12.77	9,781,676	10.00	7,659,887
	25	0.068	757,600	0.9962	12.77	9,637,848	10.00	7,547,258
	26	0.071	747,797	0.9960	12.77	9,511,013	10.00	7,447,935
	27	0.074	739,664	0.9958	12.77	9,405,469	10.00	7,365,285
	28	0.077	738,105	0.9955	12.77	9,383,548	10.00	7,348,119
Weeks	4.5	0.086	734,041	0.9948	89.39	65,272,092	70.00	51,113,619
	5.5	0.105	687,923	0.9932	89.39	61,075,576	70.00	47,827,389
	6.5	0.125	598,120	0.9917	89.39	53,019,617	70.00	41,518,886
	7.5	0.144	542,608	0.9901	89.39	48,023,630	70.00	37,606,601
	8.5	0.163	498,142	0.9886	89.39	44,019,233	70.00	34,470,817
	9.5	0.182	460,058	0.9870	89.39	40,590,316	70.00	31,785,682
	10.5	0.201	427,115	0.9855	89.39	37,624,886	70.00	29,463,497
	11.5	0.221	398,368	0.9839	89.39	35,037,680	70.00	27,437,494
	12.5	0.240	373,065	0.9824	89.39	32,760,908	0	0
	13.5	0.259	350,615	0.9809	89.39	30,741,315	0	0
	14.5	0.278	330,561	0.9793	89.39	28,937,705	0	0
	15.5	0.297	312,485	0.9778	89.39	27,312,545	0	0
	16.5	0.316	296,124	0.9763	89.39	25,842,060	0	0
	17.5	0.336	281,300	0.9747	82.63	22,656,488	0	0
	18.5	0.355	267,818	0.9732	82.63	21,536,898	0	0
	19.5	0.374	255,516	0.9717	82.63	20,515,496	0	0
	20.5	0.393	244,256	0.9702	82.63	19,580,766	0	0
	21.5	0.412	233,910	0.9687	82.63	18,722,065	0	0
	22.5	0.432	224,355	0.9671	82.63	17,929,214	0	0
	23.5	0.451	215,475	0.9656	82.63	17,192,653	0	0
	24.5	0.470	207,168	0.9641	82.63	16,504,000	0	0
	25.5	0.489	199,352	0.9626	82.63	15,856,512	0	0
	26.5	0.508	191,273	0.9611	82.63	15,190,122	0	0
	27.5	0.527	183,135	0.9596	82.63	14,521,098	0	0

Actuarial Report
Total Income Benefits Costs - Pre-OMPP

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	28.5	0.547	175,448	0.9581	82.63	13,889,834	0	0
	29.5	0.566	168,188	0.9566	82.63	13,294,260	0	0
	30.5	0.585	161,327	0.9551	82.63	12,732,004	0	0
	31.5	0.604	154,843	0.9536	82.63	12,201,179	0	0
	32.5	0.623	152,476	0.9521	82.63	11,995,883	0	0
	33.5	0.642	149,304	0.9506	82.63	11,727,966	0	0
	34.5	0.662	145,362	0.9491	82.63	11,400,468	0	0
	35.5	0.681	140,655	0.9477	82.63	11,014,061	0	0
	36.5	0.700	135,587	0.9462	82.63	10,600,611	0	0
	37.5	0.719	130,581	0.9447	82.63	10,193,266	0	0
	38.5	0.738	126,032	0.9432	82.63	9,822,787	0	0
	39.5	0.758	121,873	0.9418	82.63	9,483,790	0	0
	40.5	0.777	118,160	0.9403	82.63	9,180,481	0	0
	41.5	0.796	114,742	0.9388	82.63	8,900,981	0	0
	42.5	0.815	113,435	0.9373	82.63	8,785,836	0	0
	43.5	0.834	108,266	0.9359	82.63	8,372,374	0	0
	44.5	0.853	105,238	0.9344	82.63	8,125,491	0	0
	45.5	0.873	102,345	0.9330	82.63	7,889,768	0	0
	46.5	0.892	99,577	0.9315	82.63	7,664,382	0	0
	47.5	0.911	96,928	0.9300	82.63	7,448,827	0	0
	48.5	0.930	94,391	0.9286	82.63	7,242,521	0	0
	49.5	0.949	91,958	0.9271	82.63	7,044,809	0	0
	50.5	0.968	89,626	0.9257	82.63	6,855,422	0	0
	51.5	0.988	87,387	0.9242	82.63	6,673,714	0	0
Month	12.5	1.042	82,662	0.9202	358	27,214,571	0	0
	13.5	1.125	76,527	0.9139	358	25,024,061	0	0
	14.5	1.208	72,286	0.9077	358	23,477,120	0	0
	15.5	1.292	66,747	0.9016	358	21,531,283	0	0
	16.5	1.375	62,806	0.8955	358	20,122,726	0	0
	17.5	1.458	59,346	0.8894	358	18,885,333	0	0
	18.5	1.542	56,888	0.8834	358	17,980,484	0	0
	19.5	1.625	54,715	0.8774	358	17,176,499	0	0
	20.5	1.708	52,776	0.8715	358	16,455,543	0	0
	21.5	1.792	51,051	0.8656	358	15,809,842	0	0
	22.5	1.875	49,503	0.8597	358	15,226,578	0	0
	23.5	1.958	48,125	0.8539	358	14,702,428	0	0
	24.5	2.042	31,830	0.8481	358	9,658,340	0	0
	25.5	2.125	31,049	0.8423	358	9,357,525	0	0
	26.5	2.208	30,346	0.8366	358	9,083,691	0	0
	27.5	2.292	29,711	0.8310	358	8,833,355	0	0
	28.5	2.375	29,143	0.8253	358	8,605,779	0	0
	29.5	2.458	28,632	0.8197	358	8,397,599	0	0
	30.5	2.542	28,180	0.8142	358	8,209,032	0	0
	31.5	2.625	27,800	0.8087	358	8,043,467	0	0
	32.5	2.708	27,467	0.8032	358	7,893,275	0	0
	33.5	2.792	27,179	0.7978	358	7,757,593	0	0
	34.5	2.875	26,931	0.7923	358	7,634,728	0	0
	35.5	2.958	26,686	0.7870	358	7,514,015	0	0
	36.5	3.042	26,442	0.7816	358	7,394,868	0	0
	37.5	3.125	26,147	0.7764	358	7,262,824	0	0
	38.5	3.208	25,886	0.7711	358	7,141,609	0	0
	39.5	3.292	25,659	0.7659	358	7,031,021	0	0

Actuarial Report
Total Income Benefits Costs - Pre-OMPP

Exhibit AR-21
Page 3 of 4

	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Month	40.5	3.375	25,465	0.7607	358	6,930,585	0	0
	41.5	3.458	25,295	0.7555	358	6,837,674	0	0
	42.5	3.542	25,103	0.7504	358	6,739,798	0	0
	43.5	3.625	24,937	0.7453	358	6,649,867	0	0
	44.5	3.708	24,797	0.7403	358	6,567,732	0	0
	45.5	3.792	24,654	0.7353	358	6,485,615	0	0
	46.5	3.875	24,522	0.7303	358	6,407,184	0	0
	47.5	3.958	24,404	0.7253	358	6,333,151	0	0
	48.5	4.042	24,245	0.7204	358	6,249,259	0	0
	49.5	4.125	24,102	0.7155	358	6,170,310	0	0
	50.5	4.208	23,968	0.7107	358	6,094,432	0	0
	51.5	4.292	23,843	0.7059	358	6,021,571	0	0
	52.5	4.375	23,726	0.7011	358	5,951,425	0	0
	53.5	4.458	23,619	0.6963	358	5,884,445	0	0
	54.5	4.542	23,537	0.6916	358	5,824,285	0	0
	55.5	4.625	23,461	0.6869	358	5,766,145	0	0
	56.5	4.708	23,391	0.6823	358	5,709,990	0	0
	57.5	4.792	23,321	0.6777	358	5,654,331	0	0
	58.5	4.875	23,263	0.6731	358	5,602,054	0	0
	59.5	4.958	23,206	0.6685	358	5,550,465	0	0
Years	5.5	5.500	23,149	0.6396	4,297	63,618,831	0	0
	6.5	6.500	22,543	0.5895	4,297	57,099,910	0	0
	7.5	7.500	22,053	0.5433	4,297	51,482,740	0	0
	8.5	8.500	21,570	0.5008	4,297	46,410,300	0	0
	9.5	9.500	21,119	0.4615	4,297	41,880,113	0	0
	10.5	10.500	20,668	0.4254	4,297	37,774,890	0	0
	11.5	11.500	20,240	0.3920	4,297	34,094,594	0	0
	12.5	12.500	19,825	0.3613	4,297	30,779,281	0	0
	13.5	13.500	19,420	0.3330	4,297	27,788,478	0	0
	14.5	14.500	19,022	0.3069	4,297	25,086,610	0	0
	15.5	15.500	18,629	0.2829	4,297	22,643,607	0	0
	16.5	16.500	18,240	0.2607	4,297	20,433,895	0	0
	17.5	17.500	17,854	0.2403	4,297	18,434,532	0	0
	18.5	18.500	17,470	0.2215	4,297	16,624,927	0	0
	19.5	19.500	17,085	0.2041	4,297	14,984,840	0	0
	20.5	20.500	16,699	0.1881	4,297	13,498,883	0	0
	21.5	21.500	16,313	0.1734	4,297	12,153,783	0	0
	22.5	22.500	15,925	0.1598	4,297	10,935,215	0	0
	23.5	23.500	15,536	0.1473	4,297	9,832,351	0	0
	24.5	24.500	15,143	0.1358	4,297	8,832,840	0	0
	25.5	25.500	14,748	0.1251	4,297	7,928,514	0	0
	26.5	26.500	14,350	0.1153	4,297	7,110,184	0	0
	27.5	27.500	13,952	0.1063	4,297	6,371,412	0	0
	28.5	28.500	13,550	0.0980	6,476	5,595,673	0	0
	29.5	29.500	13,147	0.0903	6,476	4,886,657	0	0
	30.5	30.500	12,742	0.0832	6,476	4,246,236	0	0
	31.5	31.500	12,335	0.0767	6,476	3,666,191	0	0
	32.5	32.500	11,927	0.0707	6,476	3,149,500	0	0
	33.5	33.500	11,518	0.0651	6,476	2,692,247	0	0
	34.5	34.500	11,108	0.0600	6,476	2,291,147	0	0
	35.5	35.500	10,696	0.0553	6,476	1,943,132	0	0
	36.5	36.500	10,284	0.0510	6,476	1,645,759	0	0

Actuarial Report
Total Income Benefits Costs - Pre-OMPP

Exhibit AR-21
Page 4 of 4

	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
years	37.5	37.500	9,873	0.0470	6,476	3,005,537	0	0
	38.5	38.500	9,463	0.0433	6,476	2,655,046	0	0
	39.5	39.500	9,053	0.0399	6,476	2,341,025	0	0
	40.5	40.500	8,654	0.0368	6,476	2,062,532	0	0
	41.5	41.500	8,054	0.0339	6,476	1,769,154	0	0
	42.5	42.500	7,835	0.0313	6,476	1,586,219	0	0
	43.5	43.500	7,435	0.0288	6,476	1,387,316	0	0
	44.5	44.500	7,038	0.0266	6,476	1,210,359	0	0
	45.5	45.500	6,645	0.0245	6,476	1,053,246	0	0
	46.5	46.500	6,257	0.0226	6,476	914,053	0	0
	47.5	47.500	5,876	0.0208	6,476	791,147	0	0
	48.5	48.500	5,502	0.0192	6,476	682,757	0	0
	49.5	49.500	5,134	0.0177	6,476	587,181	0	0
	50.5	50.500	4,775	0.0163	6,476	503,338	0	0
	51.5	51.500	4,425	0.0150	6,476	429,902	0	0
	52.5	52.500	4,085	0.0138	6,476	365,779	0	0
	53.5	53.500	3,759	0.0127	6,476	310,220	0	0
	54.5	54.500	3,442	0.0117	6,476	261,805	0	0
	55.5	55.500	3,138	0.0108	6,476	219,984	0	0
	56.5	56.500	2,848	0.0100	6,476	184,013	0	0
	57.5	57.500	2,572	0.0092	6,476	153,161	0	0
	58.5	58.500	2,310	0.0085	6,476	126,783	0	0
	59.5	59.500	2,063	0.0078	6,476	104,356	0	0
	60.5	60.500	1,832	0.0072	6,476	85,411	0	0
	61.5	61.500	1,615	0.0066	6,476	69,396	0	0
	62.5	62.500	1,415	0.0061	6,476	56,038	0	0
(9)	Present value of all benefits paid from time 1 day to 62.5 years					\$2,512,370,389	\$559,340,313	
(10)	Number disabled at 1 week					1,000,000	1,000,000	
(11)	Present Value of average total income benefits					\$2,512	\$559	
(12)	Pre-OMPP income benefits for unemployed					\$1,256		

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%.
- (5) Benefits amount for employed persons, from Appendix 6, Exhibit 3, Columns (6), (7), and (8).
- (6) Present value of payments for all disabled wage earners during specified time period [Column (3) times Column (4) times Column (5)].
- (7) Benefits amount for housekeepers (\$70 per week).
- (8) Present value of payments for all disabled housekeepers during specified time period [Column (3) times Column (4) times Column (7)].
- (9) Sum of Columns (6) and (8).
- (10) Column (3) at 1 week.
- (11) Line (9) divided by Line (10).
- (12) Line (11) times 0.5. (Assumes half of unemployed are eligible for employed benefits.)

Accident Benefits Loss Costs
By Coverage

As described in Section 5, Subsection 2, the estimated loss cost for medical benefits was derived by separately estimating the loss costs for the attendant care, rehabilitation, and supplementary medical benefit provisions (including other non-economic losses, other than dependant care benefits, which are provided for in the estimated loss cost for income benefits). The cost estimates by component benefit, prior to the application of the external adjustment, are displayed below.

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Attendant Care		\$10.80	\$18.76
Rehabilitation *		\$12.05	\$15.05
Supplementary Medical	<u> </u>	<u>\$26.84</u>	<u>\$26.05</u>
Total	<u>\$23.00</u>	<u>\$49.69</u>	<u>\$59.86</u>

The derivation of these estimates is provided in Appendix 7, Exhibit 5.

- * The cost estimates represent the estimated additional costs (as compared to Pre-OMPP) for rehabilitation under OMPP and TRA.

Actuarial Report
 Death Benefits
 Derivation of Product Adjustment Factors

Exhibit AR-23
 Page 1 of 1

Category of Compensable Death	Distribution*	Product Benefits		
		Pre-OMPP	OMPP	T R A**
(1) Married heads of household 18 - 64	22.5 %	\$11,200	\$47,000	\$105,755
(2) Married spouse 18 - 64	22.5 %	10,000	35,000	79,270
(3) Married heads of household 65+ (no dep.)	5.0 %	10,000	35,000	52,250
(4) Married spouse 65+ (no dep.)	5.0 %	10,000	35,000	52,250
(5) 65+ not married (no dep.)	7.0 %	0	0	0
(6) 18 - 64 not married with dependant	4.0 %	11,500	41,000	98,169
(7) 18 - 64 not married without dependant	16.0 %	0	0	0
(8) Dependant children	18.0 %	2,000	10,000	10,450
Weighted Average		\$6,594	\$25,390	\$52,663
Ratio to Pre-OMPP			3.85	7.99

Benefit Assumptions ***

Pre-OMPP	OMPP
(1) \$10,000 to surviving spouse + \$1,000 x 1.2 dependants	(1) \$25,000 to surviving spouse + \$10,000 x 2.2 dependants (including spouse)
(2) \$10,000 to surviving spouse	(2) \$35,000 to surviving spouse
(3) \$10,000 to surviving spouse	(3) \$25,000 to surviving spouse + \$10,000 x 1 dependant (spouse)
(4) \$10,000 to surviving spouse	(4) \$35,000 to surviving spouse
(5) \$0	(5) \$0
(6) \$10,000 to dependants + \$1,000 x 1.6 dependants	(6) \$25,000 to dependants + \$10,000 x 1.6 dependants
(7) \$0	(7) \$0
(8) \$2,000 to parent/guardian	(8) \$10,000 to parent/guardian

T R A

- (1) $(\$95,830 + \$10,450 \times 1.2) \times .94(\% \text{ working}) + (\$52,250 + \$10,450 \times 1.2) \times .06(\% \text{ neither working})$
- (2) $\$95,830 \times .62(\% \text{ working}) + \$52,250 \times .38(\% \text{ not working})$
- (3) \$52,250 to surviving spouse
- (4) \$52,250 to surviving spouse
- (5) \$0
- (6) $(\$95,830 + \$10,450 \times 1.6) \times .67(\% \text{ working}) + (\$52,250 + \$10,450 \times 1.6) \times .33(\% \text{ not working})$
- (7) \$0
- (8) \$10,450 to parent/guardian

* See Appendix 8, Exhibit 2

** All TRA figures assume death benefits will be indexed on average for 1 year at 4.5%

*** See Appendix 8, Exhibits 3 through 5 and Actuarial Report, Section 5

Actuarial Report
Derivation of Final Loss Cost Estimates
For Accident Benefits Under OMPP

Exhibit AR-24
Page 1 of 2

Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	OMPP Threshold Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$70.39	0.49	\$34.49	0.321	\$62.61
Medical	49.69	0.64	31.80	0.321	45.81
Death	3.54	1.16	4.11	0.321	3.66
Funeral	0.51	0.89	0.45	0.321	0.50
Quebec	0.15	1.00	0.15	0.321	0.15
<u>Accident Benefits</u>	<u>\$124.28</u>		<u>\$71.00</u>		<u>\$112.73</u>

Notes:

(2) From Actuarial Report, Section 5, Subsection 2

(3) From Appendix 9, Exhibit 3

(4) (2) x (3)

(5) From Appendix 5, Exhibit 2 [(24) / (1)]

(6) (2) x (5) ^ 0.5 + (1 - (5) ^ 0.5) x ((2) + (4)) / 2

Actuarial Report
Derivation of Final Loss Cost Estimates
For Accident Benefits Under TRA

Exhibit AR-24
Page 2 of 2

Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	TRA Deductible Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$113.07	0.49	\$55.40	0.284	\$99.60
Medical	59.86	0.64	38.31	0.284	54.83
Death	7.19	1.16	8.34	0.284	7.46
Funeral	1.00	0.89	0.89	0.284	0.97
Quebec	0.08	1.00	0.08	0.284	0.08
Accident Benefits	<u>\$181.20</u>		<u>\$103.03</u>		<u>\$162.94</u>

Notes:

(2) From Actuarial Report, Section 5, Subsection 2

(3) From Appendix 9, Exhibit 3

(4) (2) x (3)

(5) From Actuarial Report, Section 5, Subsection 2

(6) $(2) \times (5)^{0.5} + (1 - (5)^{0.5}) \times ((2) + (4)) / 2$

Actuarial Report
Estimated Discounted Loss Costs for
Policy Period Beginning July 1, 1992

Exhibit AR-25
Page 1 of 1

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
(1) Bodily Injury Liability	\$347.48	\$114.86	\$97.29
(2) Accident Benefits			
Income	\$21.26	\$62.61	\$99.60
Medical	23.00	45.81	54.83
Death	0.92	3.66	7.46
Funeral	0.17	0.50	0.97
Quebec	0.26	0.15	0.08
<u>Total Accident Benefits</u>	<u>\$45.61</u>	<u>\$112.73</u>	<u>\$162.94</u>
(3) Uninsured Motorist	\$28.66	\$10.31	\$10.67
(4) <u>Underinsured Motorist</u>	<u>\$3.00</u>	<u>\$1.82</u>	<u>\$0.57</u>
(5) Sub-total Injury Coverages	\$424.39	\$239.50	\$271.40
(6) Property Damage *	\$117.33	\$118.32	\$115.75
(7) Collision	\$188.05	\$189.64	\$185.54
(8) <u>Comprehensive</u>	<u>\$86.94</u>	<u>\$87.68</u>	<u>\$87.68</u>
(9) <u>Sub-total Property Coverages</u>	<u>\$350.36</u>	<u>\$353.33</u>	<u>\$347.48</u>
(10) <u>Total Estimated Loss Costs</u>	<u>\$774.75</u>	<u>\$592.83</u>	<u>\$618.88</u>

Notes:

The following exposure weights were applied in deriving the sub-totals and totals displayed above:

Bodily Injury Liability:	100%	Property Damage:	100%
Accident Benefits:	100%	Collision:	80%
Uninsured Motorist:	100%	Comprehensive:	95%
Underinsured Motorist:	88%		

* The property damage coverage means different things under each product: under Pre-OMPP, it is a pure liability coverage; under OMPP and TRA it becomes a predominantly first party coverage with a small remaining element of liability.

Actuarial Report
Estimated Discounted Loss Costs and Premiums for
Policy Period Beginning July 1, 1992

Exhibit AR-26
Page 1 of 1

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
(1) Bodily Injury Liability	\$347.48	\$114.86	\$97.29
(2) Accident Benefits			
Income	\$21.26	\$62.61	\$99.60
Medical	23.00	45.81	54.83
Death	0.92	3.66	7.46
Funeral	0.17	0.50	0.97
Quebec	0.26	0.15	0.08
<u>Total Accident Benefits</u>	<u>\$45.61</u>	<u>\$112.73</u>	<u>\$162.94</u>
(3) Uninsured Motorist	\$28.66	\$10.31	\$10.67
(4) <u>Underinsured Motorist</u>	<u>\$3.00</u>	<u>\$1.82</u>	<u>\$0.57</u>
(5) Sub-total Injury Coverages	\$424.39	\$239.50	\$271.40
(6) Property Damage	\$117.33	\$118.32	\$115.75
(7) Collision	\$188.05	\$189.64	\$185.54
(8) <u>Comprehensive</u>	<u>\$86.94</u>	<u>\$87.68</u>	<u>\$87.68</u>
(9) <u>Sub-total Property Coverages</u>	<u>\$350.36</u>	<u>\$353.33</u>	<u>\$347.48</u>
(10) Total Estimated Loss Costs	\$774.75	\$592.83	\$618.88
(11) Expense Constant	\$51	\$51	\$51
(12) Profit Margin	\$64	\$50	\$52
(13) <u>Variable Expense Provision</u>	<u>\$174</u>	<u>\$135</u>	<u>\$140</u>
(14) <u>Total Premium</u>	<u>\$1,064</u>	<u>\$829</u>	<u>\$862</u>

Volume

3

**ACTUARIAL COSTING OF THE ROAD AHEAD:
A COMPARATIVE STUDY**

TECHNICAL APPENDIX

(Part III of III)

**Prepared by William M. Mercer Limited
for the
Ontario Automobile Insurance Review**

June 1992

 **Ontario**

Part III -- Technical Appendix

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Appendices

1. Loss Development Data and Analysis
2. Calculation of Payout Patterns and Discount Factors
3. Trend Data and Analysis
4. ULAE and GST Data and Analysis
5. Bodily Injury Liability Coverage Adjustments
6. Income Benefits Coverage Adjustments
7. Medical Benefits Coverage Adjustments
8. Death Benefits Coverage Adjustments
9. External Adjustments
10. Profit and Expense Provision Supporting Data
11. Product Comparison

Introductory Note

This Technical Appendix is the third of three volumes containing the results of a study conducted by William M. Mercer Limited (Mercer) for the Ontario Automobile Insurance Review (OAIR). It is designed to be the depository of the supporting actuarial documentation to the first two parts: the Executive Summary (Part I) and the Actuarial Report (Part II).

The Technical Appendix is designed for the use of those who wish to review our work at the finest level of detail and wish to be able to follow all of our derivations and calculations for each element of the cost components of the three products and the resultant indicated premiums. The total process is intricate, extensive, and involves literally hundreds of assumptions and many thousands of calculations -- and cannot be fully embraced without a thorough review and understanding of the Technical Appendix.

Acknowledgment

This note would not be complete if we did not acknowledge the excellent support we enjoyed from the professional staff at OAIR throughout the process of conducting the study and producing the final report.

APPENDIX 1

This appendix contains the following exhibits:

<u>Exhibit</u>	<u>Number of Pages</u>	<u>Description</u>
1	11	These pages display the of incurred losses (paid losses plus case reserves) development exhibits for each coverage*. The loss development triangles are by accident half-year, from the first half of 1983 through the first half of 1990, with losses valued as of 12 months and at each successive 6 month interval thereafter. Average link ratios based on the historical data are shown, and the selected factors are shown.
2	11	These pages are similar to Exhibit 1, but are for claim counts rather than for incurred losses.
3	11	These pages display the estimates of ultimate incurred losses for each coverage. The estimates are made by accident half-year, and then combined to provide estimated ultimate losses for the seven accident years ended 6/30/90.
4	11	These pages are similar to Exhibit 3, but are for claim counts rather than for incurred losses.

Loss Development Data and Analysis

These exhibits are intended to be self-explanatory. We believe they will be readily understood by those who are familiar with the application of development methods. If the reader is not familiar with loss development methods we recommend that they review the explanation provided in Section 5 of the accompanying Actuarial Report.

- Bodily injury liability, income benefits, medical benefits, death benefits, funeral benefits, Quebec benefits, uninsured motorist, underinsured motorist, property damage, collision (all deductibles combined), comprehensive (all deductibles combined)

Technical Appendix
Loss Development
Bodily Injury Liability (\$'000's)

Appendix I
Exhibit I
Page I of II

Accident Half Year	Cumulative Development at Indicated Age (in months)															
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	
83-1	130822	153290	175464	195471	210483	221126	227344	232641	239598	239358	240707	241783	244809	246226	246427	
83-2	180864	213794	239437	267683	281903	296566	304275	313745	317494	320003	322653	324268	326274	327621		
84-1	176676	197112	223738	243375	258490	266893	276770	281652	282232	284040	288853	290292	294308			
84-2	228544	265988	290369	321378	340779	357193	362907	368338	372185	376313	380373	384549				
85-1	221631	251926	281647	303554	332461	347639	358104	366227	373468	374501	377266					
85-2	271705	319376	344708	378850	398759	419148	437086	449826	454085	459164						
86-1	231558	264952	295739	320163	345789	360648	375900	385350	395347							
86-2	304949	347521	380101	424064	448184	472490	483762	498560								
87-1	310248	340920	380749	417944	449226	462586	476955									
87-2	380179	434268	479896	517185	549861	574268										
88-1	362789	419746	464712	494059	529158											
88-2	461841	518733	565594	612313												
89-1	402074	451699	497086													
89-2	515116	581597														
90-1	404358															

Age-to-Age Link Ratios														
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.172	1.145	1.114	1.077	1.051	1.028	1.023	1.030	0.999	1.006	1.004	1.013	1.006	1.001
83-2	1.182	1.120	1.118	1.053	1.052	1.026	1.031	1.012	1.008	1.008	1.005	1.006	1.004	
84-1	1.116	1.135	1.088	1.062	1.033	1.037	1.018	1.002	1.006	1.017	1.005	1.014		
84-2	1.164	1.092	1.107	1.060	1.048	1.016	1.015	1.010	1.011	1.011	1.011			
85-1	1.137	1.118	1.078	1.095	1.046	1.030	1.023	1.020	1.003	1.007				
85-2	1.175	1.079	1.099	1.053	1.051	1.043	1.029	1.009	1.011					
86-1	1.144	1.116	1.083	1.080	1.043	1.042	1.025	1.026						
86-2	1.140	1.094	1.116	1.057	1.054	1.024	1.031							
87-1	1.099	1.117	1.098	1.075	1.030	1.031								
87-2	1.142	1.105	1.078	1.063	1.044									
88-1	1.157	1.107	1.063	1.071										
88-2	1.123	1.090	1.083											
89-1	1.123	1.100												
89-2	1.129													

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.172	1.145	1.114	1.077	1.051	1.028	1.023	1.030	0.999	1.006	1.004	1.013	1.006	1.001
83-2	1.182	1.120	1.118	1.053	1.052	1.026	1.031	1.012	1.008	1.008	1.005	1.006	1.004	
84-1	1.116	1.135	1.088	1.062	1.033	1.037	1.018	1.002	1.006	1.017	1.005	1.014		
84-2	1.164	1.092	1.107	1.060	1.048	1.016	1.015	1.010	1.011	1.011	1.011			
85-1	1.137	1.118	1.078	1.095	1.046	1.030	1.023	1.020	1.003	1.007				
85-2	1.175	1.079	1.099	1.053	1.051	1.043	1.029	1.009	1.011					
86-1	1.144	1.116	1.083	1.080	1.043	1.042	1.025	1.026						
86-2	1.140	1.094	1.116	1.057	1.054	1.024	1.031							
87-1	1.099	1.117	1.098	1.075	1.030	1.031								
87-2	1.142	1.105	1.078	1.063	1.044									
88-1	1.157	1.107	1.063	1.071										
88-2	1.123	1.090	1.083											
89-1	1.123	1.100												
89-2	1.129													

Average Link Ratios:

Latest 6 Ex. H/L	1.129	1.102	1.086	1.067	1.046	1.032	1.024	1.013	1.007	1.009	1.005	1.013	1.005	1.001
All Periods	1.143	1.109	1.094	1.068	1.045	1.031	1.024	1.016	1.006	1.010	1.006	1.011	1.005	1.001
Selected	1.129	1.102	1.086	1.067	1.046	1.032	1.024	1.013	1.007	1.009	1.005	1.013	1.005	1.001

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.680	1.488	1.350	1.243	1.165	1.114	1.079	1.054	1.040	1.033	1.024	1.019	1.006	1.001
All Periods	1.725	1.509	1.361	1.244	1.165	1.115	1.081	1.056	1.039	1.033	1.023	1.017	1.006	1.001
Selected	1.680	1.488	1.350	1.243	1.165	1.114	1.079	1.054	1.040	1.033	1.024	1.019	1.006	1.001

William M. Mercer Limited

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Loss Development
Income Benefits (\$000's)**

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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	12178	13471	14481	15480	15872	15896	16193	16890	16853	17034	16517	16276	16437	16451	16169
83-2	17010	19325	20400	20895	21702	22169	23044	23280	23299	23308	22982	23188	23106	23090	
84-1	15615	16890	17484	18168	19227	20035	20419	20310	20459	20850	21537	20111	19379		
84-2	21451	22122	23174	24545	26516	27769	28011	27396	27655	28436	28371	28238			
85-1	18711	20588	21700	23607	24711	25085	26373	26669	26978	27047	26574				
85-2	23238	25300	28114	28895	29837	30120	30718	31015	31114	31326					
86-1	18569	20805	22422	23578	24154	24619	26345	26641	26785						
86-2	26275	29419	31282	32250	32912	33129	34252	32782							
87-1	26336	28370	30448	30984	32013	32696	32135								
87-2	33484	36101	37899	40724	41383	40376									
88-1	31294	33005	34937	36397	35131										
88-2	39883	42107	44023	42824											
89-1	33771	37134	36933												
89-2	43868	44265													
90-1	38004														

Age-to-Age Link Ratios															
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1	1.106	1.075	1.069	1.025	1.002	1.019	1.043	0.998	1.011	0.970	0.985	1.010	1.001	0.983	
83-2	1.136	1.056	1.024	1.039	1.022	1.039	1.010	1.001	1.000	0.986	1.009	0.996	0.999		
84-1	1.082	1.035	1.039	1.058	1.042	1.008	1.006	1.007	1.019	1.033	0.934	0.964			
84-2	1.031	1.048	1.059	1.080	1.047	1.009	0.978	1.009	1.028	0.998	0.995				
85-1	1.100	1.054	1.088	1.047	1.015	1.051	1.011	1.012	1.003	0.983					
85-2	1.089	1.111	1.028	1.033	1.009	1.020	1.010	1.003	1.007						
86-1	1.120	1.078	1.052	1.024	1.019	1.070	1.011	1.005							
86-2	1.120	1.063	1.031	1.021	1.007	1.034	0.957								
87-1	1.077	1.073	1.018	1.033	1.021	0.983									
87-2	1.078	1.050	1.075	1.016	0.976										
88-1	1.055	1.059	1.042	0.965											
88-2	1.056	1.046	0.973												
89-1	1.100	0.995													
89-2	1.009														

Average Link Ratios:															
	Latest 6 Ex.	H/L													
Selected	1.067	1.055	1.036	1.024	1.013	1.029	1.001	1.006	1.010	0.989	0.990	0.996	1.000	0.983	
All Periods	1.083	1.057	1.042	1.031	1.016	1.026	1.003	1.005	1.011	0.994	0.981	0.990	1.000	0.983	
Selected	1.067	1.055	1.036	1.024	1.013	1.029	1.001	1.006	1.010	0.989	0.990	0.996	1.000	1.000	

Cumulative Link Ratios:															
	Latest 6 Ex.	H/L													
Selected	1.212	1.136	1.077	1.040	1.016	1.003	0.975	0.974	0.968	0.958	0.969	0.979	0.983	0.983	
All Periods	1.240	1.145	1.083	1.039	1.008	0.992	0.967	0.964	0.959	0.949	0.955	0.973	0.983	0.983	
Selected	1.235	1.157	1.097	1.059	1.034	1.021	0.992	0.991	0.985	0.975	0.986	0.996	1.000	1.000	

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Accident Half Year	Cumulative Development at Indicated Age (in months)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	6881	7866	6820	7458	7180	7310	7488	7526	7442	7592	7569	7539	7411	7284	7363
83-2	9676	8346	9736	9992	9859	9838	9838	10003	9876	9817	9703	9702	9616	9585	
84-1	6703	7284	7426	8275	8018	8336	8455	8450	8947	8447	8259	8101	8089		
84-2	9563	11043	10175	10782	12151	11107	11419	12468	12363	12263	12192	12189			
85-1	9180	9555	9903	10595	11206	11577	11779	11718	11325	11305	11151				
85-2	12318	12238	13045	13728	14662	15329	14951	14690	14554	14310					
86-1	10732	11588	12395	12953	13834	14151	14062	13701	13555						
86-2	14854	15126	16188	16944	17621	18007	18266	18098							
87-1	14505	15319	15982	16755	17728	18321	18630								
87-2	19432	19986	21776	22290	23362	23402									
88-1	17797	19039	20496	21184	22387										
88-2	23254	24717	26852	28630											
89-1	20268	22276	24133												
89-2	27881	31532													
90-1	28111														

	Age-to-Age Link Ratios									
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72
83-1	1.143	0.867	1.094	0.963	1.018	1.024	1.005	0.989	1.020	0.997
83-2	0.863	1.167	1.026	0.987	0.998	1.022	0.995	0.987	0.994	0.988
84-1	1.087	1.019	1.114	0.969	1.040	1.014	0.999	1.059	0.944	0.978
84-2	1.155	0.921	1.060	1.127	0.914	1.028	1.092	0.992	0.992	0.994
85-1	1.041	1.036	1.070	1.058	1.033	1.017	0.995	0.966	0.998	0.986
85-2	0.994	1.066	1.052	1.068	1.045	0.975	0.983	0.991	0.983	
86-1	1.080	1.070	1.045	1.068	1.023	0.994	0.974	0.989		
86-2	1.018	1.070	1.047	1.040	1.022	1.014	0.991			
87-1	1.056	1.043	1.048	1.058	1.033	1.017				
87-2	1.029	1.090	1.024	1.048	1.002					
88-1	1.070	1.077	1.034	1.057						
88-2	1.063	1.086	1.066							
89-1	1.099	1.083								
89-2	1.131									

Average Link Ratios:											
Latest 6 Ex. H/L		12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72
All Periods		1.072	1.079	1.044	1.058	1.028	1.011	0.992	0.990	0.992	0.989
Selected		1.059	1.046	1.057	1.040	1.013	1.012	1.004	0.996	0.989	0.989
Selected		1.072	1.079	1.044	1.058	1.028	1.011	0.992	0.990	0.992	0.989

Cumulative Link Ratios:											
Latest 6 Ex. H/L		12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72
All Periods		1.264	1.179	1.093	1.047	0.990	0.963	0.953	0.961	0.971	0.979
Selected		1.205	1.138	1.088	1.029	0.989	0.976	0.964	0.960	0.964	0.975
Selected		1.251	1.167	1.082	1.036	0.979	0.952	0.942	0.950	0.960	0.968

Average Link Ratios:															
Latest 6 Ex. H/L	1.072	1.079	1.044	1.058	1.028	1.011	0.992	0.990	0.992	0.989	0.998	0.991	0.990	1.011	
All Periods	1.059	1.046	1.057	1.040	1.013	1.012	1.004	0.996	0.989	0.989	0.994	0.991	0.990	1.011	
Selected	1.072	1.079	1.044	1.058	1.028	1.011	0.992	0.990	0.992	0.989	0.998	0.991	0.990	1.000	
Cumulative Link Ratios:															
Latest 6 Ex. H/L	1.264	1.179	1.093	1.047	0.990	0.963	0.953	0.961	0.971	0.979	0.990	0.992	1.001	1.011	
All Periods	1.205	1.138	1.088	1.029	0.989	0.976	0.964	0.960	0.964	0.975	0.986	0.992	1.001	1.011	
Selected	1.251	1.167	1.082	1.036	0.979	0.952	0.942	0.950	0.960	0.968	0.979	0.981	0.990	1.000	

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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	1927	1909	2034	1902	1900	1879	1881	1874	1902	1925	1889	1888	1878	1882	1882
83-2	2364	2475	2457	2478	2595	2572	2672	2669	2656	2652	2635	2633	2630	2615	
84-1	1865	1803	1717	1764	1646	1694	1606	1588	1606	1587	1573	1573	1573		
84-2	2270	2229	2228	2112	2038	2014	2023	2009	1981	1969	1982	1980			
85-1	2052	1828	1849	1794	1737	1688	1677	1671	1673	1677	1648				
85-2	2429	2280	2260	2212	2199	2227	2206	2180	2152	2141					
86-1	1456	1424	1404	1405	1380	1361	1359	1349	1336						
86-2	2302	2224	2200	2198	2160	2123	2145	2144							
87-1	2093	2079	1953	1927	1849	1817	1801								
87-2	2485	2401	2295	2225	2224	2235									
88-1	1926	1877	1860	1840	1817										
88-2	2908	2824	2825	2753											
89-1	2414	2301	2202												
89-2	2906	2776													
90-1	3126														

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.991	1.065	0.935	0.999	0.989	1.001	0.996	1.015	1.012	0.981	1.000	0.995	1.002	1.000
83-2	1.047	0.993	1.009	1.047	0.991	1.039	0.999	0.995	0.998	0.994	0.999	0.999	0.994	
84-1	0.967	0.952	1.027	0.933	1.029	0.948	0.989	1.011	0.988	0.991	1.000	1.000		
84-2	0.982	1.000	0.948	0.965	0.988	1.004	0.993	0.986	0.994	1.007	0.999			
85-1	0.891	1.011	0.970	0.968	0.972	0.993	0.996	1.001	1.002	0.983				
85-2	0.939	0.991	0.979	0.994	1.013	0.991	0.988	0.987	0.995					
86-1	0.978	0.986	1.001	0.982	0.986	0.999	0.993	0.990						
86-2	0.966	0.989	0.999	0.983	0.983	1.010	1.000							
87-1	0.993	0.939	0.987	0.959	0.983	0.991								
87-2	0.966	0.956	0.969	1.000	0.983	0.991								
88-1	0.975	0.991	0.989	0.988	1.005									
88-2	0.971	1.000	0.975											
89-1	0.953	0.957												
89-2	0.955													

Average Link Ratios:

Latest 6 Periods	0.969	0.972	0.987	0.984	0.990	0.998	0.993	0.995	0.998	0.991	1.000	0.998	0.998	1.000
All Periods	0.970	0.987	0.982	0.983	0.994	0.997	0.994	0.998	0.998	0.991	1.000	0.998	0.998	1.000
Selected	0.969	0.972	0.987	0.984	0.990	0.998	0.993	0.995	0.998	0.991	1.000	0.998	0.998	1.000

Cumulative LDFs:

Latest 6 Periods	0.880	0.908	0.934	0.946	0.961	0.971	0.973	0.980	0.985	0.987	0.996	0.996	0.998	1.000
All Periods	0.895	0.923	0.935	0.952	0.968	0.974	0.977	0.983	0.985	0.987	0.996	0.996	0.998	1.000
Selected	0.880	0.908	0.934	0.946	0.961	0.971	0.973	0.980	0.985	0.987	0.996	0.996	0.998	1.000

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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	135	137	138	139	138	140	137	134	135	135	134	133	133	133	133
83-2	201	206	209	207	206	203	185	199	199	198	197	197	196	196	196
84-1	191	196	189	182	166	165	160	160	159	158	158	158	158	158	158
84-2	299	282	280	275	274	267	289	286	284	284	284	284	284	284	284
85-1	216	204	200	201	200	194	194	193	192	192	189	189	189	189	189
85-2	329	322	321	310	305	299	296	296	294	294	294	294	294	294	294
86-1	250	247	245	245	249	239	239	237	235	235	235	235	235	235	235
86-2	359	359	370	342	325	316	314	313	313	313	313	313	313	313	313
87-1	326	331	324	323	308	303	298	298	298	298	298	298	298	298	298
87-2	401	415	423	415	409	399	399	399	399	399	399	399	399	399	399
88-1	328	319	302	303	298	298	298	298	298	298	298	298	298	298	298
88-2	470	509	503	490	490	490	490	490	490	490	490	490	490	490	490
89-1	428	417	408	408	408	408	408	408	408	408	408	408	408	408	408
89-2	507	493	493	493	493	493	493	493	493	493	493	493	493	493	493
90-1	494	494	494	494	494	494	494	494	494	494	494	494	494	494	494

Cumulative Development at Indicated Age (in months)

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.015	1.005	1.007	0.991	1.016	0.982	0.978	1.007	1.000	0.993	0.993	0.996	1.000	1.000
83-2	1.025	1.015	0.990	0.994	0.987	0.911	1.076	1.000	0.995	0.995	1.000	0.995	1.000	1.000
84-1	1.025	0.963	0.966	0.913	0.994	0.970	1.000	0.993	0.994	1.000	1.000	1.000	1.000	1.000
84-2	0.945	0.993	0.979	0.997	0.975	1.081	0.992	0.993	1.000	1.000	1.000	1.000	1.000	1.000
85-1	0.945	0.980	1.004	0.995	0.974	1.000	0.992	0.995	1.000	0.984	1.000	1.000	1.000	1.000
85-2	0.977	0.996	0.966	0.986	0.980	0.990	1.000	0.993	1.000	0.984	1.000	1.000	1.000	1.000
86-1	0.990	0.992	0.997	1.020	0.960	0.998	0.991	0.992	1.000	0.984	1.000	1.000	1.000	1.000
86-2	1.000	1.030	0.923	0.951	0.971	0.994	0.997	0.992	1.000	0.984	1.000	1.000	1.000	1.000
87-1	1.016	0.980	0.997	0.953	0.984	0.983	0.997	0.992	1.000	0.984	1.000	1.000	1.000	1.000
87-2	1.035	1.021	0.980	0.986	0.975	0.983	0.997	0.992	1.000	0.984	1.000	1.000	1.000	1.000
88-1	0.975	0.946	1.003	0.984	0.975	0.983	0.997	0.992	1.000	0.984	1.000	1.000	1.000	1.000
88-2	1.083	0.988	0.974	0.986	0.975	0.983	0.997	0.992	1.000	0.984	1.000	1.000	1.000	1.000
89-1	0.975	0.979	0.979	0.977	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975
89-2	0.973	0.979	0.979	0.977	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975	0.975

Average Link Ratios:

Latest 6 Ex. H/L	1.000	0.992	0.987	0.977	0.975	0.996	0.995	0.994	0.999	0.996	1.000	0.996	1.500	1.000
All Periods	0.999	0.991	0.982	0.979	0.982	0.990	1.003	0.996	0.998	0.994	0.998	0.997	1.500	1.000
Selected	1.000	0.992	0.987	0.977	0.975	0.996	0.995	0.994	0.999	0.996	1.000	0.996	1.000	1.000

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.366	1.366	1.377	1.395	1.428	1.465	1.471	1.478	1.487	1.488	1.494	1.494	1.500	1.000
All Periods	1.370	1.371	1.383	1.408	1.438	1.464	1.479	1.475	1.481	1.484	1.493	1.496	1.500	1.000
Selected	0.911	0.911	0.918	0.930	0.952	0.976	0.980	0.985	0.991	0.992	0.996	0.996	1.000	1.000

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Quebec Benefits (\$000's)

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Accident		Cumulative Development at Indicated Age (in months)															
Half Year		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	
83-1		47	70	316	309	557	576	602	710	774	782	810	810	810	818	860	
83-2		60	110	159	196	180	236	198	198	187	237	200	200	200	200		
84-1		466	548	659	606	616	561	557	552	561	667	567	572	577			
84-2		342	405	370	496	446	526	415	442	444	444	429	430				
85-1		392	492	671	676	1030	553	503	510	745	722	781					
85-2		486	519	569	697	477	484	441	435	435	431						
86-1		282	425	489	446	447	451	466	486	501							
86-2		701	666	582	610	618	352	385	412								
87-1		288	279	358	380	406	416	456									
87-2		700	659	673	721	733	746										
88-1		241	268	217	210	191											
88-2		306	354	357	480												
89-1		302	302	318													
89-2		893	1279														
90-1		705															

		Age-to-Age Link Ratios													
		12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1		1.481	4.544	0.978	1.801	1.035	1.045	1.180	1.090	1.010	1.035	1.000	1.001	1.010	1.052
83-2		1.842	1.453	1.228	0.920	1.313	0.836	1.005	0.943	1.267	0.843	1.000	1.000	1.000	
84-1		1.176	1.201	0.920	1.016	0.911	0.993	0.990	1.016	1.189	0.850	1.010	1.008		
84-2		1.182	0.913	1.342	0.898	1.179	0.789	1.066	1.005	1.000	0.966	1.001			
85-1		1.255	1.364	1.007	1.524	0.537	0.910	1.014	1.460	0.969	1.082				
85-2		1.069	1.097	1.224	0.685	1.014	0.911	0.986	1.000	0.992					
86-1		1.504	1.151	0.913	1.002	1.009	1.033	1.043	1.031						
86-2		0.951	0.874	1.047	1.013	0.570	1.093	1.072							
87-1		0.970	1.285	1.061	1.069	1.023	1.098								
87-2		0.942	1.021	1.071	1.017	1.018									
88-1		1.111	0.810	0.966	0.909										
88-2		1.155	1.009	1.345											
89-1		0.998	1.053												
89-2		1.433													

Average Link Ratios:															
Latest 6 Ex. H/L		1.059	0.989	1.036	0.985	0.903	0.987	1.028	1.013	1.048	0.950	1.001	1.005	1.005	1.052
All Periods		1.219	1.367	1.092	1.078	0.961	0.968	1.045	1.078	1.071	0.955	1.003	1.005	1.005	1.000
Selected		0.994	0.939	0.949	0.916	0.930	1.030	1.044	1.016	1.003	0.957	1.007	1.006	1.005	1.000

Cumulative Link Ratios:															
Latest 6 Ex. H/L		1.046	0.988	0.999	0.964	0.979	1.084	1.098	1.068	1.054	1.006	1.059	1.057	1.057	1.052
All Periods		2.237	1.835	1.342	1.229	1.140	1.186	1.225	1.172	1.087	1.015	1.063	1.060	1.057	1.052
Selected		0.994	0.939	0.949	0.916	0.930	1.030	1.044	1.016	1.003	0.957	1.007	1.006	1.005	1.000

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Loss Development
Uninsured Motorist (\$000's)

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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	4783	5291	6350	6869	7934	8826	9476	9571	9942	9183	9458	9248	9102	9251	9243
83-2	6030	7836	8599	9733	10881	12263	11746	12543	12197	12798	12340	12652	12534	12390	
84-1	5000	5330	6588	7704	8584	8858	9177	10315	8898	8776	9030	8729	9452		
84-2	7472	10185	11967	13969	13826	14651	15860	16463	16133	16708	16929	17261			
85-1	6890	9268	11050	12183	13643	15165	15081	15371	15768	15823	15871				
85-2	9704	12008	13334	15062	16863	17565	18543	19072	18916	18181					
86-1	8341	10230	12059	14503	15977	16615	18625	19487	20341						
86-2	10280	12684	15084	16718	18747	19935	21347	22535							
87-1	10014	13093	13980	16548	17631	18089	20141								
87-2	16911	21257	23839	29391	32024	37521									
88-1	14781	18701	23844	27762	31454										
88-2	16894	23545	27305	34127											
89-1	17994	22646	28820												
89-2	19149	27533													
90-1	19660														

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.106	1.200	1.082	1.155	1.112	1.074	1.010	1.039	0.924	1.030	0.978	0.984	1.016	0.999
83-2	1.300	1.097	1.132	1.118	1.127	0.958	1.068	0.972	1.049	0.964	1.025	0.991	0.988	
84-1	1.066	1.236	1.169	1.114	1.032	1.036	1.124	0.863	0.986	1.029	0.967	1.083		
84-2	1.363	1.175	1.167	0.990	1.060	1.083	1.038	0.980	1.036	1.013	1.020			
85-1	1.345	1.192	1.103	1.120	1.112	0.994	1.019	1.026	1.003	1.003				
85-2	1.237	1.110	1.130	1.120	1.042	1.056	1.029	0.992	0.961					
86-1	1.226	1.179	1.203	1.102	1.040	1.121	1.046	1.044						
86-2	1.234	1.189	1.108	1.121	1.063	1.071	1.056							
87-1	1.307	1.068	1.184	1.065	1.026	1.113								
87-2	1.257	1.121	1.233	1.090	1.172									
88-1	1.265	1.275	1.164	1.133										
88-2	1.394	1.160	1.250											
89-1	1.259	1.273												
89-2	1.438													

Average Link Ratios:	
Latest 6 Ex. H/L	1.306
All Periods	1.271
Selected	1.306
Cumulative Link Ratios:	
Latest 6 Ex. H/L	2.450
All Periods	2.298
Selected	2.450

William M. Mercer Limited

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Loss Development
Underinsured Motorist

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Accident Half Year	Cumulative Development at Indicated Age (in months)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	2017	1818	2658	2823	4340	5360	6438	5802	6041	5854	5277	5106	5088	4999	5042
83-2	2292	3163	3854	4202	4969	5943	6305	7234	7553	7913	7609	8551	8390	8897	
84-1	689	1849	1424	1787	4110	4343	3947	3908	4482	4744	4496	5658	4961		
84-2	2239	2857	5219	7126	4762	6523	8285	7511	7064	7175	7762	7812			
85-1	2092	3549	3934	4781	5379	5747	6687	6111	6343	7043	7317				
85-2	2536	4518	4590	5029	5438	7318	7256	7675	7272	6574					
86-1	2350	2793	3757	3899	4759	4968	5393	5766	6057						
86-2	2212	3257	2616	4178	4726	4856	4488	5385							
87-1	3127	3455	4313	4621	5069	4905	5270								
87-2	4331	5333	5679	6190	6653	8152									
88-1	2511	2594	3478	4373	4482										
88-2	5050	7135	8620	10705											
89-1	2273	2716	4479												
89-2	2689	4102													
90-1	3179														

	Age-to-Age Link Ratios														
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1	0.901	1.462	1.062	1.537	1.235	1.201	0.901	1.041	0.969	0.901	0.968	0.996	0.983	1.009	
83-2	1.380	1.218	1.090	1.183	1.196	1.061	1.147	1.044	1.048	0.962	1.124	0.981	1.060		
84-1	2.684	0.770	1.255	2.300	1.057	0.909	0.990	1.147	1.058	0.948	1.258	0.877			
84-2	1.276	1.827	1.364	0.669	1.370	1.270	0.907	0.940	1.016	1.082	1.006				
85-1	1.696	1.108	1.215	1.125	1.068	1.164	0.914	1.038	1.110	1.039					
85-2	1.782	1.016	1.096	1.081	1.346	0.992	1.058	0.947	0.904						
86-1	1.189	1.345	1.038	1.221	1.044	1.086	1.069	1.050							
86-2	1.472	0.803	1.597	1.131	1.028	0.924	1.200								
87-1	1.105	1.248	1.071	1.097	0.968	1.074									
87-2	1.231	1.065	1.090	1.075	1.225										
88-1	1.033	1.341	1.257	1.025											
88-2	1.413	1.208	1.242												
89-1	1.195	1.649													
89-2	1.525														

Average Link Ratios:

Latest 6 Ex. H/L	1.236	1.216	1.165	1.096	1.091	1.079	1.008	1.020	1.023	0.983	1.065	0.981	1.022	1.009
All Periods	1.420	1.235	1.198	1.222	1.154	1.076	1.023	1.030	1.018	0.986	1.089	0.951	1.022	1.009
Selected	1.260	1.192	1.143	1.107	1.080	1.060	1.046	1.034	1.026	1.020	1.015	1.011	1.009	1.007

Cumulative Link Ratios:

Latest 6 Ex. H/L	2.516	2.036	1.674	1.437	1.311	1.202	1.114	1.105	1.083	1.059	1.077	1.011	1.031	1.009
All Periods	3.597	2.533	2.051	1.712	1.401	1.214	1.128	1.103	1.071	1.052	1.067	0.980	1.031	1.009
Selected	2.568	2.038	1.710	1.496	1.351	1.251	1.180	1.128	1.091	1.063	1.042	1.027	1.016	1.007

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Loss Development
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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	93226	91537	90978	91042	90426	90148	89961	89945	89858	89767	89698	89814	89795	89824	89782
83-2	118372	116904	116877	115774	115206	115012	115013	114796	114620	114477	114436	114600	114560	114533	
84-1	110111	110682	109845	109646	109203	109116	109271	108802	108692	108910	108510	108468	108570		
84-2	130708	130676	129956	128587	129155	128547	128269	128238	128280	128060	128006	127922			
85-1	136712	135784	134609	137013	134222	134350	134417	134169	134082	134293	133962				
85-2	156878	155731	156290	155461	155186	154994	155048	154615	154957	154661					
86-1	134011	134851	133590	133207	133078	133226	133067	132475	132120						
86-2	158800	158211	158429	157807	156978	156764	156760	156561							
87-1	155365	156330	156549	156022	155659	156064	155781								
87-2	184983	186297	184008	183964	183476	182682									
88-1	188733	188086	187581	186196	185546										
88-2	219447	219489	219624	219167											
89-1	204776	206302	205998												
89-2	252679	252845													
90-1	203069														

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.982	0.994	1.001	0.993	0.997	0.998	1.000	0.999	0.999	0.999	1.001	1.000	1.000	1.000
83-2	0.988	1.000	0.991	0.995	0.998	1.000	0.998	0.998	0.999	1.000	1.001	1.000	1.000	
84-1	1.005	0.992	0.998	0.996	0.999	1.001	0.996	0.999	1.002	0.996	1.000	1.001		
84-2	1.000	0.994	0.989	1.004	0.995	0.998	1.000	1.000	0.998	1.000	0.999			
85-1	0.993	0.991	1.018	0.980	1.001	1.000	0.998	0.999	1.002	0.998				
85-2	0.993	1.004	0.995	0.998	0.999	1.000	0.997	1.002	0.998					
86-1	1.006	0.991	0.997	0.999	1.001	0.999	0.996	0.997						
86-2	0.996	1.001	0.996	0.995	0.999	1.000	0.999							
87-1	1.006	1.001	0.997	0.998	1.003	0.998								
87-2	1.007	0.988	1.000	0.997	0.996									
88-1	0.997	0.997	0.993	0.997										
88-2	1.000	1.001	0.998											
89-1	1.007	0.999												
89-2	1.001													

Average Link Ratios:

Latest 6 Periods	1.003	0.998	0.997	0.997	1.000	0.999	0.998	0.999	1.000	0.999	1.000	1.000	1.000	1.000
All Periods	0.999	0.996	0.998	0.996	0.999	0.999	0.998	0.999	1.000	0.999	1.000	1.000	1.000	1.000
Selected	1.003	0.998	0.997	0.997	1.000	0.999	0.998	0.999	1.000	0.999	1.000	1.000	1.000	1.000

Cumulative LDFs:

Latest 6 Periods	0.990	0.987	0.989	0.992	0.995	0.995	0.996	0.998	0.999	0.999	1.000	1.000	1.000	1.000
All Periods	0.983	0.984	0.988	0.990	0.994	0.995	0.996	0.998	0.999	0.999	1.000	1.000	1.000	1.000
Selected	0.990	0.987	0.989	0.992	0.995	0.995	0.996	0.998	0.999	0.999	1.000	1.000	1.000	1.000

William M. Mercer Limited

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Loss Development
Collision (\$000's)

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Accident		Cumulative Development at Indicated Age (in months)															
Half Year		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	
83-1		107942	104473	103581	103052	102704	102523	102445	102389	102319	102305	102261	102241	102205	102186	102174	
83-2		138263	134155	131899	130988	130685	130363	130239	130154	130049	129986	129918	129901	129898	129857		
84-1		126774	121780	119928	119038	118711	118428	118308	118282	118212	118127	118072	118059	118059			
84-2		157165	150102	148167	147182	146950	146738	146329	146149	146050	145943	145913	145853				
85-1		164787	156833	154303	153673	153109	152889	152644	152626	152372	152289	152245					
85-2		194669	185848	183425	182298	181807	181432	181149	180981	180870	180516						
86-1		163102	155644	153349	152239	151770	151494	151258	151010	150838							
86-2		194239	184857	181690	180662	179972	179636	179216	178988								
87-1		186823	176646	173581	172185	171502	171260	171051									
87-2		231541	220248	216132	214289	213420	213071										
88-1		241183	227024	222608	220463	219629											
88-2		292615	277047	271910	269095												
89-1		276271	260453	255170													
89-2		335861	316021														
90-1		268474															

		Age-to-Age Link Ratios													
		12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1		0.968	0.991	0.995	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000
83-2		0.970	0.983	0.993	0.998	0.998	0.999	0.999	0.999	1.000	0.999	1.000	1.000	1.000	1.000
84-1		0.961	0.985	0.993	0.997	0.998	0.999	1.000	0.999	1.000	0.999	1.000	1.000	1.000	1.000
84-2		0.955	0.987	0.993	0.998	0.999	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000
85-1		0.952	0.984	0.996	0.996	0.999	0.998	1.000	0.998	0.999	1.000	1.000	1.000	1.000	1.000
85-2		0.955	0.987	0.994	0.997	0.998	0.998	0.999	0.999	0.998	1.000	1.000	1.000	1.000	1.000
86-1		0.954	0.985	0.993	0.997	0.998	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
86-2		0.952	0.983	0.994	0.996	0.998	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
87-1		0.946	0.983	0.992	0.996	0.999	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
87-2		0.951	0.981	0.991	0.996	0.999	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
88-1		0.941	0.981	0.990	0.996	0.999	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
88-2		0.947	0.981	0.990	0.996	0.999	0.998	0.998	0.999	0.998	1.000	1.000	1.000	1.000	1.000
89-1		0.943	0.980												
89-2		0.941													

Average Link Ratios:

Latest 6 Periods	0.945	0.982	0.992	0.996	0.998	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000
All Periods	0.953	0.984	0.993	0.997	0.998	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000
Selected	0.945	0.982	0.992	0.996	0.998	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000

Cumulative LDFs:															
Latest 6 Periods	0.910	0.963	0.981	0.989	0.993	0.995	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000
All Periods	0.922	0.967	0.983	0.990	0.993	0.995	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000
Selected	0.910	0.963	0.981	0.989	0.993	0.995	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000

William M. Mercer Limited

Technical Appendix
Loss Development
Comprehensive (\$000's)

Appendix I
Exhibit I
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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	58743	59045	58896	59121	59006	59017	58938	58935	58889	58836	58815	58815	59317	59315	59277
83-2	78029	78075	78067	77992	77932	77916	77917	77927	77904	77900	77900	77900	77890	77888	
84-1	67647	67986	67789	67782	67729	67670	67557	67498	67499	67502	67561	67550	67551		
84-2	77860	77624	77460	77319	77317	77259	77182	77147	77152	77138	77136	77125			
85-1	91405	91157	91068	91158	91061	91004	90970	90971	90977	90986	90958				
85-2	82262	82150	82289	82023	81969	81962	81911	81892	81947	81887					
86-1	75649	75676	75545	75500	75470	75471	75497	75436	75425						
86-2	86989	86580	86418	86355	86338	86356	86251	86268							
87-1	84441	83593	83394	83178	83311	83329	83304								
87-2	97412	97062	96883	96807	96773	96732									
88-1	101506	101024	100965	100754	100628										
88-2	115884	115292	115105	114997											
89-1	107927	107444													
89-2	130105	129900													
90-1	134690														

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.005	0.997	1.004	0.998	1.000	0.999	1.000	0.999	0.999	1.000	1.000	1.000	1.000	0.999
83-2	1.001	1.000	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
84-1	1.005	0.997	1.000	0.999	0.999	0.998	0.999	1.000	1.000	1.001	1.000	1.000		
84-2	0.997	0.998	0.998	1.000	0.999	0.999	1.000	1.000	1.000	1.000	1.000			
85-1	0.997	0.999	1.001	0.999	0.999	1.000	1.000	1.000	1.000	1.000				
85-2	0.999	1.002	0.997	0.999	1.000	0.999	1.000	1.001	0.999					
86-1	1.000	0.998	0.999	1.000	1.000	1.000	0.999	1.000						
86-2	0.995	0.998	0.999	1.000	1.000	0.999	1.000							
87-1	0.996	0.998	0.997	1.000	1.000	1.000								
87-2	0.995	0.998	0.999	1.000	1.000									
88-1	0.995	0.999	0.998	0.999										
88-2	0.995	0.998												
89-1	0.996	0.999												
89-2	0.998													

Average Link Ratios:

Latest 6 Periods	0.995	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.003	1.000	0.999
All Periods	0.998	0.999	0.999	1.000	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.003	1.000	0.999
Selected	0.995	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Cumulative LDFs:

Latest 6 Periods	0.994	0.999	1.001	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	1.002	0.999	0.999
All Periods	0.997	0.999	1.000	1.001	1.001	1.001	1.002	1.002	1.002	1.002	1.002	1.002	0.999	0.999
Selected	0.992	0.997	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

William M. Mercer Limited

Technical Appendix
Claim Count Development
Bodily Injury

Appendix 1
Exhibit 2
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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	14846	15181	14726	14878	14780	14651	14575	14560	14529	14433	14338	14301	14278	14261	14243
83-2	18982	18333	18484	18427	18274	18091	18088	17985	17884	17723	17683	17639	17605	17589	
84-1	17542	17312	17292	17236	17192	17204	17083	16955	16788	16700	16637	16623	16615		
84-2	21381	21457	21197	21134	21164	21008	20764	20534	20357	20280	20222	20183			
85-1	21047	20782	20595	20875	20821	20572	20366	20178	19988	19927	19863				
85-2	24409	24208	24558	24652	24425	24196	23942	23698	23632	23529					
86-1	20324	20616	20669	20676	20601	20197	20014	19925	19792						
86-2	24755	24714	24582	24412	24125	23845	23668	23434							
87-1	24289	23939	23784	23751	23715	23539	23165								
87-2	28553	28084	27841	27786	27704	27293									
88-1	27043	26669	26442	26535	26411										
88-2	30172	29774	29850	29888											
89-1	27582	27482	27287												
89-2	33034	32375													
90-1	24230														

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.023	0.970	1.010	0.993	0.991	0.995	0.999	0.998	0.993	0.993	0.997	0.998	0.999	0.999
83-2	0.966	1.008	0.997	0.992	0.990	1.000	0.994	0.994	0.991	0.998	0.998	0.998	0.999	
84-1	0.987	0.999	0.997	0.997	1.001	0.993	0.993	0.990	0.995	0.996	0.999	1.000		
84-2	1.004	0.988	0.997	1.001	0.993	0.988	0.989	0.991	0.996	0.997	0.998			
85-1	0.987	0.991	1.014	0.997	0.988	0.990	0.991	0.991	0.997	0.997				
85-2	0.992	1.014	1.004	0.991	0.991	0.990	0.990	0.997	0.996					
86-1	1.014	1.003	1.000	0.996	0.980	0.991	0.996	0.993						
86-2	0.998	0.995	0.993	0.988	0.988	0.993	0.990							
87-1	0.986	0.994	0.999	0.998	0.993	0.984								
87-2	0.984	0.991	0.998	0.997	0.993									
88-1	0.986	0.991	1.004	0.997	0.985									
88-2	0.987	1.003	1.001											
89-1	0.996	0.993												
89-2	0.980													

Average Link Ratios:

Latest 6 Periods	0.987	0.995	0.999	0.994	0.988	0.989	0.992	0.993	0.995	0.996	0.998	0.999	0.999	0.999
All Periods	0.991	0.998	1.002	0.995	0.990	0.991	0.993	0.993	0.995	0.996	0.998	0.999	0.999	0.999
Selected	0.987	0.995	0.999	0.994	0.988	0.989	0.992	0.993	0.995	0.996	0.998	0.999	0.999	0.999

Cumulative Link Ratios:

Latest 6 Periods	0.924	0.936	0.941	0.942	0.948	0.960	0.971	0.979	0.986	0.991	0.995	0.997	0.998	0.999
All Periods	0.942	0.950	0.952	0.950	0.954	0.964	0.973	0.980	0.986	0.991	0.995	0.997	0.998	0.999
Selected	0.924	0.936	0.941	0.942	0.948	0.960	0.971	0.979	0.986	0.991	0.995	0.997	0.998	0.999

William M. Mercer Limited

Technical Appendix
Claim Count Development
Income Benefits

Appendix 1
Exhibit 2
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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	7425	7081	6915	6842	6765	6717	6696	6677	6664	6651	6634	6621	6605	6609	6605
83-2	9417	8899	8690	8489	8390	8349	8336	8300	8276	8248	8230	8227	8221	8222	
84-1	8957	8494	8205	8069	7950	7954	7929	7896	7881	7869	7865	7869	7869		
84-2	11322	10588	10267	10074	10003	9913	9871	9821	9793	9770	9772	9765			
85-1	11104	10357	9974	9908	9809	9723	9671	9636	9597	9590	9586				
85-2	12904	12106	11986	11750	11662	11568	11514	11455	11435	11410					
86-1	10315	9895	9597	9486	9357	9264	9199	9171	9133						
86-2	12163	11286	11063	10818	10658	10525	10476	10419							
87-1	12117	11270	10874	10678	10494	10440	10342								
87-2	14848	13863	13500	13180	13026	12857									
88-1	14361	13110	12675	12446	12251										
88-2	16466	15125	14767	14478											
89-1	14966	14010	13600												
89-2	17876	16660													
90-1	14356														

Age-to-Age Link Ratios															
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1	0.954	0.977	0.989	0.989	0.993	0.997	0.997	0.998	0.998	0.997	0.998	0.998	1.001	0.999	
83-2	0.945	0.977	0.977	0.988	0.995	0.998	0.996	0.997	0.997	0.998	1.000	0.999	1.000		
84-1	0.948	0.966	0.983	0.985	1.001	0.997	0.996	0.998	0.998	0.999	1.001	1.000			
84-2	0.935	0.970	0.981	0.993	0.991	0.996	0.995	0.997	0.998	1.000	0.999				
85-1	0.933	0.963	0.993	0.990	0.991	0.995	0.996	0.996	0.998	1.000					
85-2	0.938	0.990	0.980	0.993	0.992	0.995	0.995	0.998	0.998						
86-1	0.959	0.970	0.988	0.986	0.990	0.993	0.997	0.996							
86-2	0.928	0.980	0.978	0.985	0.988	0.995	0.995								
87-1	0.930	0.965	0.982	0.983	0.995	0.991									
87-2	0.934	0.974	0.976	0.988	0.987										
88-1	0.913	0.967	0.982	0.984											
88-2	0.919	0.976	0.980												
89-1	0.936	0.971													
89-2	0.932														

Average Link Ratios:															
Latest 6 Periods	0.927	0.972	0.981	0.987	0.991	0.994	0.996	0.997	0.998	0.999	1.000	0.999	1.001	0.999	
All Periods	0.931	0.974	0.982	0.988	0.992	0.995	0.996	0.997	0.998	0.999	1.000	0.999	1.001	0.999	
Selected	0.927	0.972	0.981	0.987	0.991	0.994	0.996	0.997	0.998	0.999	1.000	0.999	1.001	0.999	
Cumulative Link Ratios:															
Latest 6 Periods	0.850	0.917	0.943	0.961	0.974	0.983	0.989	0.993	0.996	0.998	0.999	0.999	1.000	0.999	
All Periods	0.859	0.922	0.946	0.963	0.975	0.983	0.988	0.992	0.995	0.997	0.998	0.998	0.999	0.999	
Selected	0.850	0.917	0.943	0.961	0.974	0.983	0.989	0.993	0.996	0.998	0.999	0.999	1.000	0.999	

William M. Mercer Limited

Technical Appendix
Claim Count Development
Medical Benefits

Appendix 1
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Accident Half Year	Cumulative Development at Indicated Age (in months)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	10027	9588	9082	9115	9020	9019	9018	9021	8989	8973	8938	8924	8907	8902	8898
83-2	12811	11579	11524	11275	11229	11148	11175	11136	11098	11037	11010	10991	10978	10970	
84-1	10643	10359	10006	9912	9799	9800	9763	9732	9670	9640	9600	9586	9584		
84-2	14163	13197	12807	12546	12508	12434	12404	12311	12232	12182	12166	12144			
85-1	14194	13294	12796	12816	12739	12683	12560	12495	12382	12349	12300				
85-2	16661	15458	15493	15316	15160	15001	14932	14779	14702	14656					
86-1	13159	12728	12377	12078	11906	11766	11653	11576	11516						
86-2	16295	14897	14321	13854	13687	13465	13335	13244							
87-1	15714	14373	13596	13313	13073	12981	12855								
87-2	18951	17156	16499	16002	15640	15448									
88-1	17816	15630	14830	14362	14226										
88-2	20361	18062	17298	17026											
89-1	18595	16903	16314												
89-2	22774	20789													
90-1	18368														

Age-to-Age Link Ratios														
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.956	0.947	1.004	0.990	1.000	1.000	1.000	0.996	0.998	0.996	0.998	0.998	0.999	1.000
83-2	0.904	0.995	0.978	0.996	0.993	1.002	0.997	0.997	0.995	0.998	0.998	0.999	0.999	
84-1	0.973	0.966	0.991	0.989	1.000	0.996	0.997	0.994	0.997	0.996	0.999	1.000		
84-2	0.932	0.970	0.980	0.997	0.994	0.998	0.993	0.994	0.996	0.999	0.998			
85-1	0.937	0.963	1.002	0.994	0.996	0.990	0.995	0.991	0.997	0.996	0.998			
85-2	0.928	1.002	0.989	0.990	0.990	0.995	0.990	0.995	0.997	0.997				
86-1	0.967	0.972	0.976	0.986	0.988	0.990	0.993	0.995						
86-2	0.914	0.961	0.967	0.988	0.984	0.990	0.993							
87-1	0.915	0.946	0.979	0.982	0.993	0.990	0.993							
87-2	0.905	0.962	0.970	0.977	0.988									
88-1	0.877	0.949	0.968	0.991										
88-2	0.887	0.958	0.984											
89-1	0.909	0.965												
89-2	0.913													

Average Link Ratios:

Latest 6 Periods	0.901	0.957	0.974	0.986	0.990	0.992	0.994	0.994	0.997	0.997	0.998	0.999	0.999	1.000
All Periods	0.911	0.964	0.979	0.988	0.992	0.994	0.995	0.995	0.997	0.997	0.998	0.999	0.999	1.000
Selected	0.901	0.957	0.974	0.986	0.990	0.992	0.994	0.994	0.997	0.997	0.998	0.999	0.999	1.000

Cumulative Link Ratios:														
Latest 6 Periods	0.795	0.882	0.922	0.947	0.960	0.970	0.978	0.984	0.990	0.993	0.996	0.998	0.999	1.000
All Periods	0.822	0.902	0.935	0.955	0.966	0.974	0.980	0.985	0.990	0.993	0.996	0.998	0.999	1.000
Selected	0.795	0.882	0.922	0.947	0.960	0.970	0.978	0.984	0.990	0.993	0.996	0.998	0.999	1.000

William M. Mercer Limited

Technical Appendix
Claim Count Development
Death Benefits

Appendix 1
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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	241	234	235	239	231	228	224	221	219	219	219	217	216	216	216
83-2	303	300	317	303	302	299	295	293	290	289	289	289	287	286	
84-1	213	214	208	202	194	195	191	189	188	186	185	185	185		
84-2	315	307	292	280	270	267	266	262	258	257	258	258			
85-1	268	226	221	215	211	206	199	197	195	195	194				
85-2	329	303	297	286	283	280	278	277	275	273					
86-1	185	175	172	172	168	165	164	164	163						
86-2	229	220	215	212	211	207	205	204							
87-1	223	215	201	195	187	184	178								
87-2	250	236	227	222	218	215									
88-1	220	209	202	198	195										
88-2	290	277	275	268											
89-1	240	227	217												
89-2	301	281													
90-1	242														

Cumulative Development at Indicated Age (in months)															
Age-to-Age Link Ratios	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1	0.971	1.004	1.017	0.967	0.987	0.982	0.987	0.991	1.000	1.000	0.991	0.995	1.000	1.000	
83-2	0.990	1.057	0.956	0.997	0.990	0.987	0.993	0.990	0.997	1.000	1.000	0.993	1.000	0.997	
84-1	1.005	0.972	0.971	0.960	1.005	0.979	0.990	0.995	0.989	1.000	1.000	1.000			
84-2	0.975	0.951	0.959	0.964	0.989	0.996	0.985	0.985	0.996	1.004	1.000				
85-1	0.843	0.978	0.973	0.981	0.976	0.966	0.990	0.990	1.000	0.995					
85-2	0.921	0.980	0.963	0.990	0.989	0.993	0.996	0.993	0.993						
86-1	0.946	0.983	1.000	0.977	0.982	0.994	1.000	0.994							
86-2	0.961	0.977	0.986	0.995	0.981	0.990									
87-1	0.964	0.935	0.970	0.959	0.984	0.967									
87-2	0.944	0.962	0.978	0.982	0.986										
88-1	0.950	0.967	0.980	0.985											
88-2	0.955	0.993													
89-1	0.946	0.956													
89-2	0.934														

Average Link Ratios:

Latest 6 Periods	0.949	0.965	0.982	0.981	0.983	0.984	0.993	0.991	0.996	0.999	0.998	0.996	0.999	1.000	
All Periods	0.950	0.969	0.978	0.979	0.987	0.984	0.992	0.991	0.996	0.999	0.998	0.996	0.999	1.000	
Selected	0.949	0.965	0.982	0.981	0.983	0.984	0.993	0.991	0.996	0.999	0.998	0.996	0.999	1.000	

Cumulative Link Ratios:

Latest 6 Periods	0.828	0.873	0.905	0.922	0.940	0.956	0.972	0.979	0.988	0.992	0.993	0.995	0.999	1.000	
All Periods	0.830	0.874	0.902	0.922	0.942	0.955	0.971	0.979	0.988	0.992	0.993	0.995	0.999	1.000	
Selected	0.828	0.873	0.905	0.922	0.940	0.956	0.972	0.979	0.988	0.992	0.993	0.995	0.999	1.000	

William M. Mercer Limited

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Accident

Cumulative Development at Indicated Age (in months)

Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	99	93	93	93	93	94	92	90	90	90	89	87	87	87	87
83-2	144	146	150	149	147	147	144	144	143	142	141	141	139	139	139
84-1	144	145	140	133	132	132	129	129	127	126	126	126	126	126	126
84-2	222	215	212	211	211	208	208	207	205	205	205	205	205	205	205
85-1	169	159	158	155	153	148	148	148	147	147	147	147	147	147	147
85-2	266	259	255	247	242	239	237	237	236	236	236	236	236	236	236
86-1	189	186	186	184	183	181	180	179	177	177	177	177	177	177	177
86-2	252	252	252	242	235	231	229	228	228	228	228	228	228	228	228
87-1	228	219	205	199	192	189	183	183	183	183	183	183	183	183	183
87-2	310	298	296	289	284	277	277	277	277	277	277	277	277	277	277
88-1	253	242	237	235	229	229	229	229	229	229	229	229	229	229	229
88-2	323	310	303	299	299	299	299	299	299	299	299	299	299	299	299
89-1	279	265	256	256	256	256	256	256	256	256	256	256	256	256	256
89-2	362	342	342	342	342	342	342	342	342	342	342	342	342	342	342
90-1	267	267	267	267	267	267	267	267	267	267	267	267	267	267	267

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.939	1.000	1.000	1.000	1.011	0.979	0.978	1.000	1.000	0.989	0.978	1.000	1.000	1.000
83-2	1.014	1.027	0.993	0.987	1.000	0.980	1.000	0.993	0.993	0.993	1.000	0.986	1.000	1.000
84-1	1.007	0.966	0.950	0.992	1.000	0.977	1.000	0.984	0.992	1.000	1.000	1.000	1.000	1.000
84-2	0.968	0.986	0.995	1.000	0.986	1.000	0.995	0.990	1.000	1.000	1.000	1.000	1.000	1.000
85-1	0.941	0.994	0.981	0.987	0.967	1.000	1.000	0.993	1.000	0.980	1.000	1.000	1.000	1.000
85-2	0.974	0.985	0.969	0.980	0.988	0.992	1.000	0.996	1.000	0.980	1.000	1.000	1.000	1.000
86-1	0.984	1.000	0.989	0.995	0.989	0.994	0.994	0.989	1.000	0.989	1.000	1.000	1.000	1.000
86-2	1.000	1.000	0.960	0.971	0.983	0.991	0.996	0.996	1.000	0.996	1.000	1.000	1.000	1.000
87-1	0.961	0.936	0.971	0.965	0.984	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991
87-2	0.961	0.993	0.976	0.983	0.975	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991
88-1	0.957	0.979	0.992	0.983	0.975	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991
88-2	0.960	0.977	0.987	0.974	0.975	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991
89-1	0.950	0.966	0.987	0.974	0.975	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991
89-2	0.945	0.966	0.987	0.974	0.975	0.968	0.991	0.991	0.991	0.991	0.991	0.991	0.991	0.991

Average Link Ratios:

Latest 6 Periods	0.956	0.975	0.979	0.978	0.981	0.991	0.998	0.991	0.998	0.992	0.995	0.995	1.000	1.000
All Periods	0.965	0.980	0.978	0.982	0.984	0.988	0.995	0.992	0.998	0.992	0.995	0.995	1.000	1.000
Selected	0.956	0.975	0.979	0.978	0.981	0.991	0.998	0.991	0.998	0.992	0.995	0.995	1.000	1.000

Cumulative Link Ratios:

Latest 6 Periods	0.840	0.879	0.902	0.921	0.942	0.960	0.969	0.971	0.980	0.982	0.990	0.995	1.000	1.000
All Periods	0.854	0.885	0.904	0.924	0.941	0.956	0.968	0.972	0.980	0.982	0.990	0.995	1.000	1.000
Selected	0.840	0.879	0.902	0.921	0.942	0.960	0.969	0.971	0.980	0.982	0.990	0.995	1.000	1.000

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Accident Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	24	24	33	32	32	31	32	31	31	31	31	31	31	31	31
83-2	31	34	36	35	35	37	39	39	38	38	38	38	38	38	38
84-1	41	43	44	40	41	41	42	41	41	41	40	40	40	40	40
84-2	86	83	83	91	87	89	86	85	85	85	83	84			
85-1	51	49	50	53	52	44	41	41	41	40	39				
85-2	82	86	88	85	79	80	79	80	80	80					
86-1	66	65	64	63	63	63	63	64	64						
86-2	86	87	73	73	74	74	75	75							
87-1	52	44	46	46	51	51	52								
87-2	52	50	48	48	51	51									
88-1	50	52	45	43	43										
88-2	75	76	71	68											
89-1	54	48	50												
89-2	87	82													
90-1	41														

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.000	1.375	0.970	1.000	0.969	1.032	0.969	1.000	1.000	1.000	1.000	1.000	1.000	1.000
83-2	1.097	1.059	0.972	1.000	1.037	1.054	1.000	0.974	1.000	1.000	1.000	1.000	1.000	1.000
84-1	0.956	1.023	0.909	1.025	1.000	1.024	0.976	1.000	1.000	0.976	1.000	1.000	1.000	1.000
84-2	0.965	1.000	1.096	0.956	1.023	0.966	0.988	1.000	1.000	0.976	1.012			
85-1	0.961	1.020	1.060	0.981	0.846	0.932	1.000	1.000	0.976	0.975				
85-2	1.049	1.023	0.966	0.929	1.013	0.988	1.013	1.000	1.000					
86-1	0.985	0.985	0.984	1.000	1.000	1.014	1.016	1.000						
86-2	1.012	0.839	1.000	1.014	1.000	1.014	1.000							
87-1	0.846	1.045	1.000	1.109	1.000	1.020								
87-2	0.962	0.960	1.063	1.000	1.000									
88-1	1.040	0.865	0.956	1.000										
88-2	1.013	0.934	0.958											
89-1	0.889	1.042												
89-2	0.943													

Average Link Ratio:															
Latest 6 Ex. H/L	0.952	0.950	0.986	1.004	1.000	0.992	1.000	1.000	1.000	0.984	1.000	1.000	1.000	1.000	1.000
All Periods	0.961	0.962	0.998	0.999	0.985	1.000	0.995	0.996	0.996	0.985	1.003	1.000	1.000	1.000	1.000
Selected	0.952	0.950	0.986	1.004	1.000	0.992	1.000	1.000	1.000	0.984	1.000	1.000	1.000	1.000	1.000

Cumulative Link Ratio:															
Latest 6 Ex. H/L	0.874	0.918	0.966	0.980	0.976	0.976	0.984	0.984	0.984	0.984	1.000	1.000	1.000	1.000	1.000
All Periods	0.885	0.921	0.958	0.960	0.961	0.975	0.975	0.980	0.984	0.988	1.003	1.000	1.000	1.000	1.000
Selected	0.874	0.918	0.966	0.980	0.976	0.976	0.984	0.984	0.984	0.984	1.000	1.000	1.000	1.000	1.000

William M. Mercer Limited

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Claim Count Development
Uninsured Motorist

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Accident

Cumulative Development at Indicated Age (in months)

Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	626	644	666	694	694	681	666	668	665	657	651	637	636	635	629
83-2	820	924	927	948	952	938	930	922	902	886	871	862	862	850	
84-1	841	866	899	920	920	900	897	883	864	844	832	835	830		
84-2	1090	1149	1194	1230	1227	1223	1231	1217	1181	1179	1170	1160			
85-1	973	1058	1092	1109	1125	1125	1083	1045	1033	1036	1019				
85-2	1252	1341	1406	1432	1462	1434	1404	1387	1369	1355					
86-1	1076	1173	1194	1224	1198	1158	1163	1150	1122						
86-2	1418	1506	1551	1545	1524	1508	1497	1461							
87-1	1359	1473	1476	1456	1453	1464	1438								
87-2	1852	1936	1943	2077	2078	2045									
88-1	1672	1738	1902	1996	1996										
88-2	1868	2094	2237	2336											
89-1	1831	2061	2159												
89-2	2236	2399													
90-1	1969														

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.029	1.034	1.042	1.000	0.981	0.978	1.003	0.996	0.988	0.991	0.978	0.998	0.998	0.991
83-2	1.127	1.003	1.023	1.004	0.985	0.991	0.991	0.978	0.982	0.983	0.990	1.000	0.986	
84-1	1.030	1.038	1.023	1.000	0.978	0.997	0.984	0.978	0.977	0.986	1.004	0.994		
84-2	1.054	1.039	1.030	0.998	0.997	1.007	0.989	0.970	0.998	0.992	0.991			
85-1	1.087	1.032	1.016	1.014	1.000	0.963	0.965	0.989	1.003	0.984				
85-2	1.071	1.048	1.018	1.021	0.981	0.979	0.988	0.987	0.990					
86-1	1.090	1.018	1.025	0.979	0.967	1.004	0.989	0.976						
86-2	1.062	1.030	0.996	0.986	0.990	0.993								
87-1	1.084	1.002	0.986	0.998	1.008	0.982								
87-2	1.045	1.004	1.069	1.000	0.984									
88-1	1.039	1.094	1.049	1.000										
88-2	1.126	1.068	1.044											
89-1	1.073													
89-2														

Average Link Ratios:

Latest 6 Ex. H/L	1.081	1.038	1.029	0.996	0.989	0.990	0.984	0.980	0.990	0.987	0.991	0.998	0.992	0.991
All Periods	1.080	1.039	1.025	1.000	0.988	0.990	0.986	0.982	0.990	0.987	0.991	0.997	0.992	0.991
Selected	1.081	1.038	1.029	0.996	0.989	0.990	0.984	0.980	0.990	0.987	0.991	0.998	0.992	0.991

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.030	0.953	0.918	0.892	0.896	0.906	0.915	0.930	0.949	0.959	0.972	0.981	0.983	0.991
All Periods	1.034	0.957	0.921	0.898	0.898	0.909	0.919	0.932	0.949	0.959	0.971	0.980	0.983	0.991
Selected	1.030	0.953	0.918	0.892	0.896	0.906	0.915	0.930	0.949	0.959	0.972	0.981	0.983	0.991

William M. Mercer Limited

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Claim Count Development
Underinsured Motorist

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Accident Half Year	Cumulative Development at Indicated Age (in months)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	87	80	81	93	106	120	122	110	105	108	99	93	88	87	88
83-2	94	74	100	107	112	114	112	108	105	104	89	95	90	88	
84-1	49	74	75	76	77	77	72	72	73	69	71	65	67		
84-2	82	82	91	99	94	93	94	85	81	86	83	83			
85-1	68	71	74	74	83	76	84	73	70	66	66				
85-2	81	86	88	97	89	103	105	96	94	80					
86-1	48	55	71	70	76	74	75	69	68						
86-2	87	108	91	107	102	100	92	97							
87-1	70	60	58	65	66	67	70								
87-2	74	90	105	115	117	114									
88-1	71	74	85	87	95										
88-2	94	112	118	134											
89-1	67	69	75												
89-2	92	104													
90-1	56														

Age-to-Age Link Ratios														
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.920	1.013	1.148	1.140	1.132	1.017	0.902	0.955	1.029	0.917	0.939	0.946	0.989	1.011
83-2	0.787	1.351	1.070	1.047	1.018	0.982	0.964	0.972	0.990	0.856	1.067	0.947	0.978	
84-1	1.510	1.014	1.013	1.013	1.000	0.935	1.000	1.014	0.945	1.029	0.915	1.031		
84-2	1.000	1.110	1.088	0.949	0.989	1.011	0.904	0.953	1.062	0.965	1.000			
85-1	1.044	1.042	1.000	1.122	0.916	1.105	0.869	0.959	0.943	1.000				
85-2	1.062	1.023	1.102	0.918	1.157	1.019	0.914	0.979	0.851					
86-1	1.146	1.291	0.986	1.086	0.974	1.014	0.920	0.986						
86-2	1.241	0.843	1.176	0.953	0.980	0.920	1.054							
87-1	0.857	0.967	1.121	1.015	1.015	1.045								
87-2	1.216	1.167	1.095	1.017	0.974									
88-1	1.042	1.149	1.024	1.092										
88-2	1.191	1.054	1.136											
89-1	1.030	1.087												
89-2	1.130													

Average Link Ratios:

Latest 6 Ex. H/L	1.098	1.064	1.094	1.018	0.986	1.022	0.935	0.974	0.977	0.961	0.970	0.947	0.984	1.011
All Periods	1.107	1.073	1.080	1.019	1.001	1.004	0.941	0.974	0.970	0.953	0.980	0.975	0.984	1.011
Selected	1.098	1.064	1.094	1.018	0.986	1.022	0.935	0.974	0.977	0.961	0.970	0.947	0.984	1.011

Cumulative Link Ratios:

Latest 6 Ex. H/L	1.024	0.933	0.877	0.802	0.788	0.799	0.782	0.836	0.858	0.878	0.914	0.942	0.995	1.011
All Periods	1.057	0.955	0.890	0.824	0.809	0.808	0.805	0.856	0.879	0.906	0.950	0.969	0.994	1.011
Selected	1.024	0.933	0.877	0.802	0.788	0.799	0.782	0.836	0.858	0.878	0.914	0.942	0.995	1.011

William M. Mercer Limited

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Property Damage

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Accident Half Year		Cumulative Development at Indicated Age (in months)														
		12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1		77452	76442	76278	76245	76039	75950	75883	75850	75810	75782	75766	75753	75747	75742	75740
83-2		91049	90060	90088	89654	89488	89337	89284	89228	89166	89128	89113	89096	89083	89079	
84-1		87374	87359	86854	86666	86457	86384	86290	86234	86185	86147	86112	86099	86090		
84-2		94166	93329	92942	92514	92458	92299	92188	92094	92048	92007	91987	91967			
85-1		100433	99638	99142	99100	98850	98699	98601	98516	98455	98418	98391				
85-2		102397	101166	101455	101143	100932	100795	100665	100568	100502	100458					
86-1		87562	87536	87209	86976	86770	86633	86500	86416	86367						
86-2		91061	90352	90314	89970	89712	89467	89341	89240							
87-1		87754	87112	86703	86475	86153	86009	85866								
87-2		94259	93550	93478	93100	92783	92569									
88-1		94247	93270	92740	92470	92145										
88-2		98795	97724	97734	97425											
89-1		90142	89693	89262												
89-2		101306	100687													
90-1		85834														
		Age-to-Age Link Ratios														
83-1		12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1		0.987	0.998	1.000	0.997	0.999	0.999	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
83-2		0.989	1.000	0.995	0.998	0.998	0.998	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
84-1		1.000	0.994	0.998	0.998	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
84-2		0.991	0.996	0.995	0.999	0.998	0.999	0.999	1.000	1.000	1.000	1.000	1.000			
85-1		0.992	0.995	1.000	0.997	0.998	0.999	0.999	1.000	1.000	1.000	1.000				
85-2		0.988	1.003	0.997	0.998	0.999	0.999	0.999	0.999	1.000	1.000					
86-1		1.000	0.996	0.997	0.998	0.999	0.999	0.999	0.999	1.000						
86-2		0.992	1.000	0.996	0.997	0.998	0.998	0.999	0.999							
87-1		0.993	0.995	0.997	0.997	0.997	0.997	0.999	0.999							
87-2		0.992	0.992	0.996	0.997	0.997	0.999	0.998								
88-1		0.990	0.994	0.997	0.996	0.996	0.998									
88-2		0.989	1.000	0.997	0.997	0.998										
89-1		0.995	0.995													
89-2																

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	0.987	0.998	1.000	0.997	0.999	0.999	1.000	0.999	1.000	1.000	1.000	1.000	1.000	1.000
83-2	0.989	1.000	0.995	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	
84-1	1.000	0.994	0.998	0.998	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000		
84-2	0.991	0.996	0.995	0.999	0.998	0.999	0.999	1.000	1.000	1.000	1.000			
85-1	0.992	0.995	1.000	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000			
85-2	0.988	1.003	0.997	0.998	0.999	0.999	0.999	0.999	1.000	1.000				
86-1	1.000	0.996	0.997	0.998	0.999	0.999	0.999	0.999						
86-2	0.992	1.000	0.996	0.997	0.998	0.999	0.998	0.999	1.000					
87-1	0.993	0.995	0.996	0.997	0.997	0.999	0.998	0.999						
87-2	0.992	0.999	0.996	0.997	0.997	0.998	0.999							
88-1	0.990	0.994	0.997	0.996	0.997	0.998								
88-2	0.989	1.000	0.997	0.997	0.997									
89-1	0.995	0.995												
89-2	0.994													

Average Link Ratios:

Latest 6 Periods	0.992	0.997	0.997	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000
All Periods	0.993	0.998	0.997	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000
Selected	0.992	0.997	0.997	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000

Cumulative Link Ratios:

Latest 6 Periods	0.978	0.986	0.989	0.992	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000
All Periods	0.980	0.987	0.989	0.992	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000
Selected	0.978	0.986	0.989	0.992	0.995	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000

William M. Mercer Limited

Technical Appendix
Claim Count Development
Collision

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Accident Half Year	Cumulative Development at Indicated Age (in months)														
	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	94905	92794	92529	92362	92262	92217	92178	92179	92159	92156	92144	92133	92124	92116	92110
83-2	110934	109067	108515	108099	107999	107910	107884	107850	107822	107795	107784	107771	107759	107750	
84-1	107320	105685	104885	104611	104379	104340	104308	104280	104249	104223	104195	104189	104185		
84-2	117340	114956	114189	113686	113573	113497	113456	113405	113371	113352	113326	113294			
85-1	131247	127915	126806	126480	126338	126262	126192	126125	126073	126041	126000				
85-2	136299	133373	132692	132304	132121	131983	131883	131778	131733	131678					
86-1	117861	115394	114648	114202	114024	113902	113819	113735	113671						
86-2	122449	119348	118659	118105	117839	117618	117478	117384							
87-1	117643	113668	112466	111759	111413	111267	111166								
87-2	127418	123753	122540	121833	121516	121340									
88-1	129865	124365	122817	121918	121507										
88-2	137197	132198	131126	130200											
89-1	126303	121701	119955												
89-2	142182	136415													
90-1	120472														
Age-to-Age Link Ratios															
	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96	
83-1	0.978	0.997	0.998	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
83-2	0.983	0.995	0.996	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
84-1	0.985	0.992	0.997	0.998	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
84-2	0.980	0.993	0.996	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	
85-1	0.975	0.991	0.997	0.999	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
85-2	0.979	0.995	0.997	0.999	0.999	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
86-1	0.975	0.994	0.996	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
86-2	0.979	0.994	0.995	0.998	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
87-1	0.966	0.989	0.994	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
87-2	0.971	0.990	0.994	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
88-1	0.958	0.988	0.993	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
88-2	0.964	0.992	0.993	0.997	0.998	0.999	0.999	0.999	1.000	1.000	1.000	1.000	1.000	1.000	
89-1	0.964	0.986													
89-2	0.959														

Average Link Ratios:

Latest 6 Periods	0.964														
All Periods	0.967														
Selected	0.964														
Cumulative Link Ratios:															
Latest 6 Periods	0.944														
All Periods	0.950														
Selected	0.944														

William M. Mercer Limited

Technical Appendix
Claim Count Development
Comprehensive

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Accident	Cumulative Development at Indicated Age (in months)														
Half Year	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96
83-1	144741	145021	145232	145267	145266	145260	145251	145256	145243	145242	145241	145243	145241	145240	145238
83-2	168997	170135	170269	170224	170210	170191	170192	170180	170179	170181	170182	170175	170175	170175	170175
84-1	160281	161371	161402	161442	161408	161422	161410	161406	161404	161402	161396	161393	161394	161394	161394
84-2	175268	176536	176698	176661	176672	176651	176649	176639	176635	176628	176625	176619	176619	176619	176619
85-1	189681	191015	191069	191112	191099	191099	191100	191092	191084	191085	191074	191074	191074	191074	191074
85-2	186564	187769	187967	187959	187952	187948	187942	187936	187928	187923	187923	187923	187923	187923	187923
86-1	171831	172567	172632	172608	172607	172598	172580	172562	172556	172556	172556	172556	172556	172556	172556
86-2	180972	181779	181928	181913	181895	181897	181877	181869	181869	181869	181869	181869	181869	181869	181869
87-1	172459	172856	172884	172865	172848	172830	172810	172810	172810	172810	172810	172810	172810	172810	172810
87-2	191434	192586	192748	192746	192694	192681	192681	192681	192681	192681	192681	192681	192681	192681	192681
88-1	188552	188978	188992	188939	188873	188873	188873	188873	188873	188873	188873	188873	188873	188873	188873
88-2	214525	215434	215579	215597	215597	215597	215597	215597	215597	215597	215597	215597	215597	215597	215597
89-1	196539	197312	197397	197397	197397	197397	197397	197397	197397	197397	197397	197397	197397	197397	197397
90-1	215302	216588	216588	216588	216588	216588	216588	216588	216588	216588	216588	216588	216588	216588	216588
90-1	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501	228501

Age-to-Age Link Ratios

	12:18	18:24	24:30	30:36	36:42	42:48	48:54	54:60	60:66	66:72	72:78	78:84	84:90	90:96
83-1	1.002	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
83-2	1.007	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
84-1	1.007	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
84-2	1.007	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
85-1	1.007	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
85-2	1.006	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
86-1	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
86-2	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
87-1	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
87-2	1.006	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
88-1	1.002	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
88-2	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
89-1	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
89-2	1.006	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Average Link Ratios:

Latest 6 Periods	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Periods	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.004	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Cumulative Link Ratios:

Latest 6 Periods	1.005	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
All Periods	1.005	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Selected	1.005	1.001	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

William M. Mercer Limited

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Bodily Injury Liability

Appendix 1
Exhibit 3
Page 1 of 11

<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$327,621,490	1.001	\$327,949,111
84-1	294,307,562	1.006	296,073,407
84-2	384,549,016	1.019	391,855,447
85-1	377,265,747	1.024	386,320,125
85-2	459,163,560	1.033	474,315,957
86-1	395,347,375	1.040	411,161,270
86-2	498,560,254	1.054	525,482,508
87-1	476,954,780	1.079	514,634,208
87-2	574,267,785	1.114	639,734,312
88-1	529,157,510	1.165	616,468,499
88-2	612,313,479	1.243	761,105,654
89-1	497,085,959	1.350	671,066,045
89-2	581,597,097	1.488	865,416,480
90-1	404,358,072	1.680	679,321,561

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	621,929,052	624,022,519	1.003
1985	761,814,763	778,175,572	1.021
1986	854,510,935	885,477,227	1.036
1987	975,515,034	1,040,116,715	1.066
1988	1,103,425,295	1,256,202,812	1.138
1989	1,109,399,438	1,432,171,699	1.291
1990	985,955,169	1,544,738,041	1.567

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 1.
- (3) Selected cumulative link ratio from Exhibit 1, Page 1.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Income Benefits

Appendix 1
Exhibit 3
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$23,090,003	1.000	\$23,090,003
84-1	19,378,949	1.000	19,378,949
84-2	28,237,628	0.996	28,124,677
85-1	26,574,461	0.986	26,202,419
85-2	31,326,017	0.975	30,542,867
86-1	26,784,814	0.985	26,383,042
86-2	32,781,782	0.991	32,486,746
87-1	32,135,492	0.992	31,878,408
87-2	40,375,948	1.021	41,223,843
88-1	35,131,106	1.034	36,325,564
88-2	42,824,100	1.059	45,350,722
89-1	36,932,681	1.097	40,515,151
89-2	44,264,613	1.157	51,214,157
90-1	38,004,496	1.235	46,935,553

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	42,468,952	42,468,952	1.000
1985	54,812,089	54,327,096	0.991
1986	58,110,831	56,925,908	0.980
1987	64,917,274	64,365,154	0.991
1988	75,507,054	77,549,407	1.027
1989	79,756,781	85,865,873	1.077
1990	82,269,109	98,149,710	1.193

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 2.
- (3) Selected cumulative link ratio from Exhibit 1, Page 2.
- (4) Column (2) times Column (3).
- (5) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Medical Benefits

Appendix 1
Exhibit 3
Page 3 of 11

<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$9,585,434	1.000	\$9,585,434
84-1	8,089,154	0.990	8,008,262
84-2	12,189,256	0.981	11,957,660
85-1	11,151,312	0.979	10,917,134
85-2	14,310,608	0.968	13,852,669
86-1	13,554,666	0.960	13,012,479
86-2	18,097,675	0.950	17,192,791
87-1	18,629,845	0.942	17,549,314
87-2	23,401,957	0.952	22,278,663
88-1	22,386,790	0.979	21,916,667
88-2	28,629,799	1.036	29,660,472
89-1	24,133,318	1.082	26,112,250
89-2	31,532,183	1.167	36,798,058
90-1	28,111,474	1.251	35,167,454

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	17,674,588	17,593,696	0.995
1985	23,340,568	22,874,795	0.980
1986	27,865,274	26,865,148	0.964
1987	36,727,520	34,742,105	0.946
1988	45,788,747	44,195,330	0.965
1989	52,763,117	55,772,722	1.057
1990	59,643,657	71,965,512	1.207

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 3.
- (3) Selected cumulative link ratio from Exhibit 1, Page 3.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Death Benefits

Appendix 1
Exhibit 3
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$2,614,512	1.000	\$2,614,512
84-1	1,572,882	0.998	1,569,736
84-2	1,980,254	0.996	1,972,333
85-1	1,648,462	0.996	1,641,868
85-2	2,140,773	0.987	2,112,943
86-1	1,335,742	0.985	1,315,706
86-2	2,143,834	0.980	2,100,957
87-1	1,801,080	0.973	1,752,451
87-2	2,235,084	0.971	2,170,267
88-1	1,816,537	0.961	1,745,692
88-2	2,752,652	0.946	2,604,009
89-1	2,202,203	0.934	2,056,858
89-2	2,776,257	0.908	2,520,841
90-1	3,126,064	0.880	2,750,936

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	4,187,394	4,184,248	0.999
1985	3,628,716	3,614,201	0.996
1986	3,476,515	3,428,649	0.986
1987	3,944,914	3,853,408	0.977
1988	4,051,621	3,915,959	0.967
1989	4,954,855	4,660,866	0.941
1990	5,902,321	5,271,778	0.893

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 4.
- (3) Selected cumulative link ratio from Exhibit 1, Page 4.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Funeral Benefits

Appendix 1
Exhibit 3
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$196,116	1.000	\$196,116
84-1	158,250	1.000	158,250
84-2	283,958	0.996	282,822
85-1	188,931	0.996	188,175
85-2	294,120	0.992	291,767
86-1	234,849	0.991	232,735
86-2	312,877	0.985	308,184
87-1	298,038	0.980	292,077
87-2	398,744	0.976	389,174
88-1	298,192	0.952	283,879
88-2	490,298	0.930	455,977
89-1	408,394	0.918	374,906
89-2	493,445	0.911	449,528
90-1	493,621	0.911	449,689

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	354,366	354,366	1.000
1985	472,889	470,997	0.996
1986	528,969	524,502	0.992
1987	610,915	600,261	0.983
1988	696,936	673,053	0.966
1989	898,692	830,883	0.925
1990	987,066	899,217	0.911

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 5.
- (3) Selected cumulative link ratio from Exhibit 1, Page 5.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Quebec Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$199,905	1.000	\$199,905
84-1	576,942	1.005	579,827
84-2	429,718	1.006	432,296
85-1	781,149	1.007	786,617
85-2	431,470	0.957	412,917
86-1	501,224	1.003	502,728
86-2	412,203	1.016	418,798
87-1	456,283	1.044	476,359
87-2	746,351	1.030	768,742
88-1	190,684	0.930	177,336
88-2	480,492	0.916	440,131
89-1	317,598	0.949	301,401
89-2	1,279,454	0.939	1,201,407
90-1	705,118	0.994	700,887

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	776,847	779,732	1.004
1985	1,210,867	1,218,913	1.007
1986	932,694	915,644	0.982
1987	868,486	895,158	1.031
1988	937,035	946,078	1.010
1989	798,090	741,531	0.929
1990	1,984,572	1,902,295	0.959

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 6.
- (3) Selected cumulative link ratio from Exhibit 1, Page 6.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Uninsured Motorist

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$12,390,142	0.999	\$12,377,752
84-1	9,452,205	1.001	9,461,657
84-2	17,261,484	0.992	17,123,392
85-1	15,870,809	0.991	15,727,972
85-2	18,180,914	1.006	18,289,999
86-1	20,340,500	1.003	20,401,522
86-2	22,535,318	0.996	22,445,177
87-1	20,141,301	1.038	20,906,670
87-2	37,520,798	1.122	42,098,335
88-1	31,453,916	1.194	37,555,976
88-2	34,127,192	1.323	45,150,275
89-1	28,819,690	1.582	45,592,750
89-2	27,532,821	1.876	51,651,572
90-1	19,659,709	2.450	48,166,287

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	21,842,347	21,839,409	1.000
1985	33,132,293	32,851,364	0.992
1986	38,521,414	38,691,521	1.004
1987	42,676,619	43,351,847	1.016
1988	68,974,714	79,654,311	1.155
1989	62,946,882	90,743,025	1.442
1990	47,192,530	99,817,859	2.115

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 7.
- (3) Selected cumulative link ratio from Exhibit 1, Page 7.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Underinsured Motorist

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$8,896,946	1.007	\$8,959,225
84-1	4,961,121	1.016	5,040,499
84-2	7,811,508	1.027	8,022,419
85-1	7,317,271	1.042	7,624,596
85-2	6,574,458	1.063	6,988,649
86-1	6,057,443	1.091	6,608,670
86-2	5,385,006	1.128	6,074,287
87-1	5,270,130	1.180	6,218,753
87-2	8,151,796	1.251	10,197,897
88-1	4,482,266	1.351	6,055,541
88-2	10,704,668	1.496	16,014,183
89-1	4,478,733	1.710	7,658,633
89-2	4,102,130	2.038	8,360,141
90-1	3,179,422	2.568	8,164,756

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	13,858,067	13,999,724	1.010
1985	15,128,779	15,647,015	1.034
1986	12,631,901	13,597,319	1.076
1987	10,655,136	12,293,040	1.154
1988	12,634,062	16,253,438	1.286
1989	15,183,401	23,672,817	1.559
1990	7,281,552	16,524,897	2.269

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 8.
- (3) Selected cumulative link ratio from Exhibit 1, Page 8.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Property Damage

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$114,533,016	1.000	\$114,533,016
84-1	108,570,174	1.000	108,570,174
84-2	127,922,261	1.000	127,922,261
85-1	133,961,988	1.000	133,961,988
85-2	154,660,502	0.999	154,505,841
86-1	132,119,562	0.999	131,987,442
86-2	156,560,858	0.998	156,247,736
87-1	155,781,057	0.996	155,157,933
87-2	182,681,880	0.995	181,768,471
88-1	185,545,931	0.995	184,618,201
88-2	219,166,864	0.992	217,413,529
89-1	205,997,820	0.989	203,731,844
89-2	252,845,465	0.987	249,558,474
90-1	203,068,562	0.990	201,037,876

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	223,103,190	223,103,190	1.000
1985	261,884,249	261,884,249	1.000
1986	286,780,064	286,493,284	0.999
1987	312,341,915	311,405,669	0.997
1988	368,227,811	366,386,672	0.995
1989	425,164,684	421,145,373	0.991
1990	455,914,027	450,596,350	0.988

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 9.
- (3) Selected cumulative link ratio from Exhibit 1, Page 9.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Collision

Appendix 1
Exhibit 3
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$129,857,261	1.000	\$129,857,261
84-1	118,059,129	1.000	118,059,129
84-2	145,852,824	1.000	145,852,824
85-1	152,245,143	1.000	152,245,143
85-2	180,515,720	1.000	180,515,720
86-1	150,837,520	0.999	150,686,682
86-2	178,988,004	0.998	178,630,028
87-1	171,050,554	0.997	170,537,402
87-2	213,071,346	0.995	212,005,989
88-1	219,628,630	0.993	218,091,230
88-2	269,095,009	0.989	266,134,964
89-1	255,169,802	0.981	250,321,576
89-2	316,021,094	0.963	304,328,314
90-1	268,473,958	0.910	244,311,302

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	247,916,390	247,916,390	1.000
1985	298,097,967	298,097,967	1.000
1986	331,353,240	331,202,402	1.000
1987	350,038,558	349,167,430	0.998
1988	432,699,976	430,097,219	0.994
1989	524,264,811	516,456,540	0.985
1990	584,495,052	548,639,615	0.939

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 10.
- (3) Selected cumulative link ratio from Exhibit 1, Page 10.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Loss Link Ratios
Comprehensive

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Losses at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Loss</u>
(1)	(2)	(3)	(4)
83-2	\$77,888,333	1.000	\$77,888,333
84-1	67,550,720	1.000	67,550,720
84-2	77,125,017	1.000	77,125,017
85-1	90,958,232	1.000	90,958,232
85-2	81,886,843	1.000	81,886,843
86-1	75,424,895	1.000	75,424,895
86-2	86,268,350	1.000	86,268,350
87-1	83,304,255	1.000	83,304,255
87-2	96,731,516	1.000	96,731,516
88-1	100,627,554	1.000	100,627,554
88-2	114,996,923	1.000	114,996,923
89-1	107,312,114	0.999	107,204,802
89-2	129,900,014	0.997	129,510,314
90-1	134,689,927	0.992	133,612,408

<u>Accident Year Ending 6/30</u>	<u>Reported Losses at 12/31/90</u>	<u>Projected Ultimate Loss</u>	<u>Annual Loss Development Link Ratio</u>
(5)	(6)	(7)	(8)
1984	145,439,053	145,439,053	1.000
1985	168,083,249	168,083,249	1.000
1986	157,311,738	157,311,738	1.000
1987	169,572,605	169,572,605	1.000
1988	197,359,070	197,359,070	1.000
1989	222,309,037	222,201,725	1.000
1990	264,589,941	263,122,722	0.994

Notes by Column:

- (2) Half year reported losses as of 12/31/90 from Exhibit 1, Page 11.
- (3) Selected cumulative link ratio from Exhibit 1, Page 11.
- (4) Column (2) times Column (3).
- (6) Sum of reported losses from relevant accident half years in Column (2).
- (7) Sum of ultimate reported losses from relevant accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Bodily Injury Liability

Appendix 1
Exhibit 4
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Accident Half Year	Reported Claims at 12/31/90	Half Year Link Ratio	Projected Ultimate Claims
(1)	(2)	(3)	(4)
83-2	17,589	0.999	17,571
84-1	16,615	0.998	16,582
84-2	20,183	0.997	20,122
85-1	19,863	0.995	19,764
85-2	23,529	0.991	23,317
86-1	19,792	0.986	19,515
86-2	23,434	0.979	22,942
87-1	23,165	0.971	22,493
87-2	27,293	0.960	26,201
88-1	26,411	0.948	25,038
88-2	29,888	0.942	28,154
89-1	27,287	0.941	25,677
89-2	32,375	0.936	30,303
90-1	24,230	0.924	22,389

Accident Year Ending 6/30	Reported Claims at 12/31/90	Projected Ultimate Claims	Annual Claim Count Link Ratio
(5)	(6)	(7)	(8)
1984	34,204	34,153	0.999
1985	40,046	39,886	0.996
1986	43,321	42,832	0.989
1987	46,599	45,435	0.975
1988	53,704	51,239	0.954
1989	57,175	53,832	0.942
1990	56,605	52,692	0.931

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 1.
- (3) Selected cumulative link ratio from Exhibit 2, Page 1.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Income Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	8,222	0.999	8,214
84-1	7,869	1.000	7,869
84-2	9,765	0.999	9,755
85-1	9,586	0.999	9,576
85-2	11,410	0.998	11,387
86-1	9,133	0.996	9,096
86-2	10,419	0.993	10,346
87-1	10,342	0.989	10,228
87-2	12,857	0.983	12,638
88-1	12,251	0.974	11,932
88-2	14,478	0.961	13,913
89-1	13,600	0.943	12,825
89-2	16,660	0.917	15,277
90-1	14,356	0.850	12,203

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	16,091	16,083	0.999
1985	19,351	19,332	0.999
1986	20,543	20,484	0.997
1987	20,761	20,574	0.991
1988	25,108	24,571	0.979
1989	28,078	26,738	0.952
1990	31,016	27,480	0.886

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 2.
- (3) Selected cumulative link ratio from Exhibit 2, Page 2.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Medical Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	10,970	1.000	10,970
84-1	9,584	0.999	9,574
84-2	12,144	0.998	12,120
85-1	12,300	0.996	12,251
85-2	14,656	0.993	14,553
86-1	11,516	0.990	11,401
86-2	13,244	0.984	13,032
87-1	12,855	0.978	12,572
87-2	15,448	0.970	14,985
88-1	14,226	0.960	13,657
88-2	17,026	0.947	16,124
89-1	16,314	0.922	15,042
89-2	20,789	0.882	18,336
90-1	18,368	0.795	14,603

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	20,554	20,544	1.000
1985	24,444	24,371	0.997
1986	26,172	25,954	0.992
1987	26,099	25,604	0.981
1988	29,674	28,642	0.965
1989	33,340	31,165	0.935
1990	39,157	32,938	0.841

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 3.
- (3) Selected cumulative link ratio from Exhibit 2, Page 3.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Death Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	286	1.000	286
84-1	185	0.999	185
84-2	258	0.995	257
85-1	194	0.993	193
85-2	273	0.992	271
86-1	163	0.988	161
86-2	204	0.979	200
87-1	178	0.972	173
87-2	215	0.956	206
88-1	195	0.940	183
88-2	268	0.922	247
89-1	217	0.905	196
89-2	281	0.873	245
90-1	242	0.828	200

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	471	471	1.000
1985	452	449	0.994
1986	436	432	0.991
1987	382	373	0.976
1988	410	389	0.948
1989	485	443	0.914
1990	523	446	0.852

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 4.
- (3) Selected cumulative link ratio from Exhibit 2, Page 4.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Funeral Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	139	1.000	139
84-1	126	1.000	126
84-2	205	0.995	204
85-1	144	0.990	143
85-2	236	0.982	232
86-1	177	0.980	173
86-2	228	0.971	221
87-1	183	0.969	177
87-2	277	0.960	266
88-1	229	0.942	216
88-2	299	0.921	275
89-1	256	0.902	231
89-2	342	0.879	301
90-1	267	0.840	224

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	265	265	1.000
1985	349	347	0.993
1986	413	405	0.981
1987	411	399	0.970
1988	506	482	0.952
1989	555	506	0.912
1990	609	525	0.862

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 5.
- (3) Selected cumulative link ratio from Exhibit 2, Page 5.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Quebec Benefits

Appendix 1
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	38	1.000	38
84-1	40	1.000	40
84-2	84	1.000	84
85-1	39	1.000	39
85-2	80	0.984	79
86-1	64	0.984	63
86-2	75	0.984	74
87-1	52	0.984	51
87-2	51	0.976	50
88-1	43	0.976	42
88-2	68	0.980	67
89-1	50	0.966	48
89-2	82	0.918	75
90-1	41	0.874	36

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	78	78	1.000
1985	123	123	1.000
1986	144	142	0.984
1987	127	125	0.984
1988	94	92	0.976
1989	118	115	0.974
1990	123	111	0.903

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 6.
- (3) Selected cumulative link ratio from Exhibit 2, Page 6.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Uninsured Motorist

Appendix 1
Exhibit 4
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<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	850	0.991	842
84-1	830	0.983	816
84-2	1,160	0.981	1,138
85-1	1,019	0.972	990
85-2	1,355	0.959	1,299
86-1	1,122	0.949	1,065
86-2	1,461	0.930	1,359
87-1	1,438	0.915	1,316
87-2	2,045	0.906	1,853
88-1	1,996	0.896	1,788
88-2	2,336	0.892	2,084
89-1	2,159	0.918	1,982
89-2	2,399	0.953	2,286
90-1	1,969	1.030	2,028

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	1,680	1,658	0.987
1985	2,179	2,128	0.977
1986	2,477	2,364	0.954
1987	2,899	2,675	0.923
1988	4,041	3,641	0.901
1989	4,495	4,066	0.904
1990	4,368	4,314	0.988

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 7.
- (3) Selected cumulative link ratio from Exhibit 2, Page 7.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Underinsured Motorist

Appendix 1
Exhibit 4
Page 8 of 11

<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	88	1.011	89
84-1	67	0.995	67
84-2	83	0.942	78
85-1	66	0.914	60
85-2	80	0.878	70
86-1	68	0.858	58
86-2	97	0.836	81
87-1	70	0.782	55
87-2	114	0.799	91
88-1	95	0.788	75
88-2	134	0.802	107
89-1	75	0.877	66
89-2	104	0.933	97
90-1	56	1.024	57

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	155	156	1.004
1985	149	139	0.930
1986	148	129	0.869
1987	167	136	0.813
1988	209	166	0.794
1989	209	173	0.829
1990	160	154	0.965

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 8.
- (3) Selected cumulative link ratio from Exhibit 2, Page 8.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Property Damage

Appendix 1
Exhibit 4
Page 9 of 11

<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	89,079	1.000	89,079
84-1	86,090	1.000	86,090
84-2	91,967	1.000	91,967
85-1	98,391	1.000	98,391
85-2	100,458	1.000	100,458
86-1	86,367	1.000	86,367
86-2	89,240	0.999	89,151
87-1	85,866	0.998	85,694
87-2	92,569	0.997	92,291
88-1	92,145	0.995	91,684
88-2	97,425	0.992	96,646
89-1	89,262	0.989	88,280
89-2	100,687	0.986	99,277
90-1	85,834	0.978	83,946

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	175,169	175,169	1.000
1985	190,358	190,358	1.000
1986	186,825	186,825	1.000
1987	175,106	174,845	0.999
1988	184,714	183,976	0.996
1989	186,687	184,926	0.991
1990	186,521	183,223	0.982

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 9.
- (3) Selected cumulative link ratio from Exhibit 2, Page 9.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Collision

Appendix 1
Exhibit 4
Page 10 of 11

<u>Accident Half Year</u>	<u>Reported Claims at 12/31/90</u>	<u>Half Year Link Ratio</u>	<u>Projected Ultimate Claims</u>
(1)	(2)	(3)	(4)
83-2	107,750	1.000	107,750
84-1	104,185	1.000	104,185
84-2	113,294	1.000	113,294
85-1	126,000	1.000	126,000
85-2	131,678	1.000	131,678
86-1	113,671	1.000	113,671
86-2	117,384	1.000	117,384
87-1	111,166	0.999	111,055
87-2	121,340	0.998	121,097
88-1	121,507	0.997	121,142
88-2	130,200	0.995	129,549
89-1	119,955	0.989	118,635
89-2	136,415	0.979	133,550
90-1	120,472	0.944	113,726

<u>Accident Year Ending 6/30</u>	<u>Reported Claims at 12/31/90</u>	<u>Projected Ultimate Claims</u>	<u>Annual Claim Count Link Ratio</u>
(5)	(6)	(7)	(8)
1984	211,935	211,935	1.000
1985	239,294	239,294	1.000
1986	245,349	245,349	1.000
1987	228,550	228,439	1.000
1988	242,847	242,240	0.997
1989	250,155	248,184	0.992
1990	256,887	247,276	0.963

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 10.
- (3) Selected cumulative link ratio from Exhibit 2, Page 10.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

Technical Appendix
Calculation of Annual Ultimate Claim Count Link Ratios
Comprehensive

Appendix 1
Exhibit 4
Page 11 of 11

Accident Half Year	Reported Claims at 12/31/90	Half Year Link Ratio	Projected Ultimate Claims
(1)	(2)	(3)	(4)
83-2	170,175	1.000	170,175
84-1	161,394	1.000	161,394
84-2	176,619	1.000	176,619
85-1	191,074	1.000	191,074
85-2	187,923	1.000	187,923
86-1	172,556	1.000	172,556
86-2	181,869	1.000	181,869
87-1	172,810	1.000	172,810
87-2	192,681	1.000	192,681
88-1	188,873	1.000	188,873
88-2	215,597	1.000	215,597
89-1	197,397	1.000	197,397
89-2	216,588	1.001	216,805
90-1	228,503	1.005	229,646

Accident Year Ending 6/30	Reported Claims at 12/31/90	Projected Ultimate Claims	Annual Claim Count Link Ratio
(5)	(6)	(7)	(8)
1984	331,569	331,569	1.000
1985	367,693	367,693	1.000
1986	360,479	360,479	1.000
1987	354,679	354,679	1.000
1988	381,554	381,554	1.000
1989	412,994	412,994	1.000
1990	445,091	446,450	1.003

Notes by Column:

- (2) Half year reported claim counts as of 12/30/90 from Exhibit 2, Page 11.
- (3) Selected cumulative link ratio from Exhibit 2, Page 11.
- (4) Column (2) times Column (3).
- (6) Sum of reported claim counts from successive accident half years in Column (2).
- (7) Sum of ultimate claim counts from successive accident half years in Column (4).
- (8) Column (7) divided by Column (6).

APPENDIX 2

Technical Appendix
Calculation of Payout Patterns
Bodily Injury Liability

Appendix 2
Exhibit 1
Page 1 of 11

Accident Year Ending 6/30	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	12	24	36	48	60	72	84	
1984	26,139,010	117,344,949	231,065,547	344,070,674	436,079,188	513,751,616	559,490,702	623,795,000
1985	30,377,630	138,182,471	279,983,901	408,668,059	531,172,145	621,018,620		777,813,000
1986	34,762,111	160,179,482	321,129,530	465,509,392	593,527,815			885,273,000
1987	40,194,307	187,669,019	369,589,637	536,414,915				1,039,899,000
1988	50,868,297	224,754,041	453,498,289					1,255,698,000
1989	57,243,985	251,663,006						1,432,234,000
1990	61,851,082							1,544,991,000

Accident Year Ending 6/30	Cumulative Percentage Paid						
	12	24	36	48	60	72	84
1984	0.042	0.188	0.370	0.552	0.699	0.824	0.897
1985	0.039	0.178	0.360	0.525	0.683	0.798	
1986	0.039	0.181	0.363	0.526	0.670		
1987	0.039	0.180	0.355	0.516			
1988	0.041	0.179	0.361				
1989	0.040	0.176					
1990	0.040						
Avg Cum Pct.	0.040	0.180	0.362	0.530	0.684	0.811	0.897
Incremental Pct.	0.040	0.140	0.182	0.168	0.154	0.127	0.086
Incremental LDF	4.518	2.007	1.463	1.292	1.185	1.106	—
Cumulative LDF	25.055	5.546	2.763	1.888	1.462	1.233	1.115

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	84	96	108	120	132	144	156
Cum Pct.	0.897	0.947	0.973	0.987	0.993	0.997	0.998
Incremental Pct.	0.086	0.050	0.026	0.013	0.007	0.003	0.002
Incremental LDF	1.056	1.028	1.014	1.007	1.003	1.002	1.001
Cumulative LDF	1.115	1.056	1.028	1.014	1.007	1.003	1.002

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 1, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Income Benefits

Appendix 2
Exhibit 1
Page 2 of 11

Accident Year Ending 6/30	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	12	24	36	48	60	72	84	
1984	12,560,270	25,702,297	30,225,633	32,910,379	36,002,283	37,899,198	39,468,048	42,469,000
1985	14,864,718	30,670,084	36,775,884	40,738,755	44,556,616	47,775,791		54,319,000
1986	16,955,391	33,596,472	40,802,860	44,943,529	48,911,880			56,949,000
1987	18,365,357	39,600,896	47,705,051	53,143,621				64,333,000
1988	22,534,557	48,095,992	58,892,222					77,546,000
1989	24,843,429	53,188,835						85,898,000
1990	28,045,491							98,147,000

Accident Year Ending 6/30	Cumulative Percentage Paid						
	12	24	36	48	60	72	84
1984	0.296	0.605	0.712	0.775	0.848	0.892	0.929
1985	0.274	0.565	0.677	0.750	0.820	0.880	
1986	0.298	0.590	0.716	0.789	0.859		
1987	0.285	0.616	0.742	0.826			
1988	0.291	0.620	0.759				
1989	0.289	0.619					
1990	0.286						
Avg Cum Pct.	0.288	0.602	0.721	0.785	0.842	0.886	0.929
Incremental Pct.	0.288	0.314	0.119	0.064	0.057	0.044	0.043
Incremental LDF	2.090	1.197	1.088	1.073	1.052	1.049	—
Cumulative LDF	3.468	1.660	1.386	1.274	1.187	1.129	1.076

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	84	96	108	120	132	144	156
Cum Pct.	0.929	0.964	0.982	0.991	0.995	0.998	0.999
Incremental Pct.	0.043	0.035	0.018	0.009	0.005	0.002	0.001
Incremental LDF	1.037	1.018	1.009	1.005	1.002	1.001	1.001
Cumulative LDF	1.076	1.037	1.018	1.009	1.005	1.002	1.001

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 2, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Medical Benefits

Appendix 2
Exhibit 1
Page 3 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	4,035,108	9,502,902	12,673,548	14,846,634	16,186,188	16,841,570	17,182,657	17,587,000
1985	4,696,833	11,728,798	15,836,654	18,518,707	21,508,185	22,270,003		22,874,000
1986	5,918,096	13,842,882	19,015,477	22,765,258	25,016,719			26,862,000
1987	6,188,699	16,677,916	23,446,575	28,173,095				34,745,000
1988	8,436,526	22,378,595	31,815,143					44,186,000
1989	9,378,279	27,404,058						55,770,000
1990	11,747,396							71,990,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.229	0.540	0.721	0.844	0.920	0.958	0.977
1985	0.205	0.513	0.692	0.810	0.940	0.974	
1986	0.220	0.515	0.708	0.847	0.931		
1987	0.178	0.480	0.675	0.811			
1988	0.191	0.506	0.720				
1989	0.168	0.491					
1990	0.163						
Avg Cum Pct.	0.194	0.508	0.703	0.828	0.931	0.966	0.977
Incremental Pct.	0.194	0.314	0.195	0.125	0.103	0.035	0.011
Incremental LDF	2.622	1.385	1.178	1.124	1.038	1.012	—
Cumulative LDF	5.164	1.970	1.422	1.208	1.075	1.036	1.024

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	0.977	0.989	0.994	0.997	0.999	0.999	1.000
Incremental Pct.	0.012	0.011	0.006	0.003	0.001	0.001	0.000
Incremental LDF	1.012	1.006	1.003	1.001	1.001	1.000	1.000
Cumulative LDF	1.023	1.012	1.006	1.003	1.001	1.001	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 3, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Death Benefits

Appendix 2
Exhibit 1
Page 4 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	2,563,685	3,457,609	3,661,552	4,061,478	4,091,550	4,139,929	4,136,134	4,183,000
1985	2,327,706	3,412,148	3,512,479	3,567,617	3,580,134	3,596,054		3,614,000
1986	2,239,001	3,135,494	3,246,551	3,328,268	3,351,904			3,428,000
1987	2,543,816	3,626,013	3,700,727	3,851,392				3,854,000
1988	2,554,167	3,544,073	3,664,413					3,918,000
1989	3,207,570	4,320,678						4,663,000
1990	3,346,660							5,270,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.613	0.827	0.875	0.971	0.978	0.990	0.989
1985	0.644	0.944	0.972	0.987	0.991	0.995	
1986	0.653	0.915	0.947	0.971	0.978		
1987	0.660	0.941	0.960	0.999			
1988	0.652	0.905	0.935				
1989	0.688	0.927					
1990	0.635						
Avg Cum Pct.	0.649	0.910	0.938	0.982	0.982	0.992	0.992
Incremental Pct.	0.649	0.260	0.028	0.044	0.000	0.010	0.000
Incremental LDF	1.401	1.031	1.047	1.000	1.010	1.000	—
Cumulative LDF	1.540	1.099	1.066	1.018	1.018	1.008	1.008

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	0.992	0.996	0.998	0.999	1.000	1.000	1.000
Incremental Pct.	0.000	0.004	0.002	0.001	0.001	0.000	0.000
Incremental LDF	1.004	1.002	1.001	1.001	1.000	1.000	1.000
Cumulative LDF	1.008	1.004	1.002	1.001	1.000	1.000	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 4, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Funeral Benefits

Appendix 2
Exhibit 1
Page 5 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	239,582	354,086	363,936	351,356	352,356	352,356	351,356	354,000
1985	293,502	437,803	448,222	472,244	472,800	472,875		471,000
1986	357,975	508,874	517,273	517,979	517,979			525,000
1987	405,048	583,558	591,172	596,324				601,000
1988	459,738	658,700	659,784					673,000
1989	555,505	818,847						832,000
1990	583,630							899,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.677	1.000	1.028	0.993	0.995	0.995	0.993
1985	0.623	0.930	0.952	1.003	1.004	1.004	
1986	0.682	0.969	0.985	0.987	0.987		
1987	0.674	0.971	0.984	0.992			
1988	0.683	0.979	0.980				
1989	0.668	0.984					
1990	0.649						
Avg Cum Pct.	0.665	0.972	0.986	0.994	0.995	1.000	1.000
Incremental Pct.	0.665	0.307	0.014	0.008	0.002	0.004	0.000
Incremental LDF	1.462	1.014	1.008	1.002	1.004	1.000	—
Cumulative LDF	1.504	1.029	1.014	1.007	1.005	1.000	1.000

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Incremental Pct.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Incremental LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 5, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Quebec Benefits

Appendix 2
Exhibit 1
Page 6 of 11

Accident Year Ending 6/30	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	12	24	36	48	60	72	84	
1984	67,252	230,000	308,125	658,801	691,410	749,431	764,830	780,000
1985	130,469	308,054	539,623	661,021	720,378	750,715		1,219,000
1986	218,817	524,161	682,747	734,244	744,609			916,000
1987	169,565	363,038	561,371	656,589				895,000
1988	271,597	485,229	597,497					946,000
1989	115,884	360,915						741,000
1990	143,396							1,904,000

Accident Year Ending 6/30	Cumulative Percentage Paid							
	12	24	36	48	60	72	84	
1984	0.086	0.295	0.651	0.845	0.886	0.961	0.981	
1985	0.107	0.253	0.443	0.542	0.591	0.616		
1986	0.239	0.572	0.745	0.802	0.813			
1987	0.189	0.406	0.627	0.734				
1988	0.287	0.513	0.632					
1989	0.156	0.487						
1990	0.075							
Avg Cum Pct.	0.163	0.421	0.620	0.731	0.763	0.788	0.981	
Incremental Pct.	0.163	0.258	0.199	0.111	0.033	0.025	0.192	
Incremental LDF	2.584	1.472	1.179	1.045	1.033	1.244	—	
Cumulative LDF	6.138	2.376	1.614	1.369	1.310	1.269	1.020	

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	84	96	108	120	132	144	156
Cum Pct.	0.981	0.990	0.995	0.998	0.999	0.999	1.000
Incremental Pct.	0.192	0.010	0.005	0.002	0.001	0.001	0.000
Incremental LDF	1.010	1.005	1.002	1.001	1.001	1.000	1.000
Cumulative LDF	1.020	1.010	1.005	1.002	1.001	1.001	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 6, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Uninsured Motorist

Appendix 2
Exhibit 1
Page 7 of 11

Accident Year Ending 6/30	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	12	24	36	48	60	72	84	
1984	1,216,098	4,008,236	6,885,574	10,528,811	13,824,655	15,925,854	18,226,866	21,842,000
1985	1,496,467	5,709,436	10,612,498	16,824,169	21,039,999	25,264,040		32,867,000
1986	1,903,073	5,636,202	11,232,378	17,198,410	23,490,560			38,675,000
1987	2,916,239	8,258,032	14,239,902	20,027,343				43,360,000
1988	3,784,694	10,929,112	22,523,398					79,666,000
1989	4,514,148	13,852,291						90,770,000
1990	5,577,928							99,813,000

Accident Year Ending 6/30	Cumulative Percentage Paid						
	12	24	36	48	60	72	84
1984	0.056	0.184	0.315	0.482	0.633	0.729	0.834
1985	0.046	0.174	0.323	0.512	0.640	0.769	
1986	0.049	0.146	0.290	0.445	0.607		
1987	0.067	0.190	0.328	0.462			
1988	0.048	0.137	0.283				
1989	0.050	0.153					
1990	0.056						
Avg Cum Pct.	0.053	0.164	0.308	0.475	0.627	0.749	0.834
Incremental Pct.	0.053	0.111	0.144	0.167	0.152	0.122	0.086
Incremental LDF	3.094	1.879	1.543	1.319	1.195	1.114	—
Cumulative LDF	18.878	6.102	3.247	2.105	1.595	1.335	1.198

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	84	96	108	120	132	144	156
Cum Pct.	0.834	0.914	0.956	0.978	0.992	0.994	0.997
Incremental Pct.	0.086	0.079	0.042	0.022	0.011	0.006	0.003
Incremental LDF	1.095	1.046	1.023	1.011	1.006	1.003	1.001
Cumulative LDF	1.198	1.095	1.046	1.023	1.011	1.006	1.003

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 8, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Underinsured Motorist

Appendix 2
Exhibit 1
Page 8 of 11

Accident Year Ending 6/30	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	12	24	36	48	60	72	84	
1984	57,348	284,217	1,246,997	3,472,814	4,918,991	6,349,299	9,320,766	13,997,000
1985	97,173	332,260	891,814	3,041,522	5,344,105	8,040,443		15,643,000
1986	59,566	445,695	958,515	2,624,939	5,672,292			13,592,000
1987	201,743	292,049	705,063	1,327,372				12,296,000
1988	77,755	414,797	1,174,982					16,247,000
1989	568,863	859,703						23,670,000
1990	101,910							16,523,000

Accident Year Ending 6/30	Cumulative Percentage Paid							
	12	24	36	48	60	72	84	
1984	0.004	0.020	0.089	0.248	0.351	0.454	0.666	
1985	0.006	0.021	0.057	0.194	0.342	0.514		
1986	0.004	0.033	0.071	0.193	0.417			
1987	0.016	0.024	0.057	0.108				
1988	0.005	0.026	0.072					
1989	0.024	0.036						
1990	0.006							
Avg Cum Pct.	0.009	0.027	0.069	0.186	0.370	0.484	0.666	
Incremental Pct.	0.009	0.017	0.043	0.117	0.184	0.114	0.182	
Incremental LDF	2.824	2.598	2.684	1.991	1.307	1.376	—	
Cumulative LDF	105.924	37.514	14.439	5.379	2.702	2.067	1.502	

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	84	96	108	120	132	144	156
Cum Pct.	0.666	0.816	0.903	0.950	0.975	0.987	0.994
Incremental Pct.	0.182	0.150	0.087	0.047	0.024	0.012	0.006
Incremental LDF	1.225	1.107	1.052	1.026	1.013	1.006	1.003
Cumulative LDF	1.502	1.225	1.107	1.052	1.026	1.013	1.006

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 9, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Property Damage

Appendix 2
Exhibit 1
Page 9 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	162,169,922	214,977,464	219,487,382	221,225,114	221,977,071	222,798,021	222,577,410	223,103,000
1985	183,964,555	250,865,293	256,574,482	258,490,473	259,988,809	260,671,182		261,884,000
1986	207,341,743	274,059,731	280,719,739	282,826,277	284,425,014			286,493,000
1987	217,432,772	296,826,796	304,378,206	306,542,137				311,405,000
1988	253,556,030	350,137,364	359,265,137					366,387,000
1989	290,791,766	400,734,134						421,339,000
1990	321,342,425							450,443,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.727	0.964	0.984	0.992	0.995	0.999	0.998
1985	0.702	0.958	0.980	0.987	0.993	0.995	
1986	0.724	0.957	0.980	0.987	0.993		
1987	0.698	0.953	0.977	0.984			
1988	0.692	0.956	0.981				
1989	0.690	0.951					
1990	0.713						
Avg Cum Pct.	0.707	0.956	0.980	0.988	0.993	0.997	0.998
Incremental Pct.	0.707	0.250	0.024	0.007	0.006	0.004	0.001
Incremental LDF	1.353	1.025	1.007	1.006	1.004	1.001	—
Cumulative LDF	1.415	1.046	1.020	1.013	1.007	1.003	1.002

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	0.998	0.999	0.999	1.000	1.000	1.000	1.000
Incremental Pct.	0.001	0.001	0.001	0.000	0.000	0.000	0.000
Incremental LDF	1.001	1.001	1.000	1.000	1.000	1.000	1.000
Cumulative LDF	1.002	1.001	1.001	1.000	1.000	1.000	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 10, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Collision

Appendix 2
Exhibit 1
Page 10 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	237,424,667	250,060,794	248,445,105	248,171,428	248,086,822	247,925,094	247,876,900	247,916,000
1985	285,699,101	301,151,000	298,759,132	298,300,451	298,098,085	297,979,499		298,098,000
1986	325,440,864	335,043,348	332,204,975	331,580,762	331,275,492			331,353,000
1987	344,396,487	353,717,097	350,065,843	349,398,734				349,339,000
1988	428,530,163	437,304,428	431,432,864					430,104,000
1989	525,611,572	526,146,993						516,401,000
1990	568,460,002							548,841,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.958	1.009	1.002	1.001	1.001	1.000	1.000
1985	0.958	1.010	1.002	1.001	1.000	1.000	
1986	0.982	1.011	1.003	1.001	1.000		
1987	0.986	1.013	1.002	1.000			
1988	0.996	1.017	1.003				
1989	1.018	1.019					
1990	1.036						
Avg Cum Pct.	0.991	1.013	1.002	1.001	1.000	1.000	1.000
Incremental Pct.	0.991	0.022	-0.011	-0.002	0.000	0.000	0.000
Incremental LDF	1.023	0.990	0.998	1.000	1.000	1.000	—
Cumulative LDF	1.010	0.987	0.998	0.999	1.000	1.000	1.000

Extended Tail Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Incremental Pct.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Incremental LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 13, Column 9

William M. Mercer Limited

Technical Appendix
Calculation of Payout Patterns
Comprehensive

Appendix 2
Exhibit 1
Page 11 of 11

Accident Year Ending <u>6/30</u>	Cumulative Paid Losses (\$'s) at Indicated Age (in months)							Ultimate Loss *
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>	
1984	121,967,236	144,928,283	145,299,295	145,371,364	145,343,380	145,372,925	145,418,695	145,439,000
1985	132,282,935	167,600,750	167,989,972	168,008,077	168,048,859	168,052,921		168,083,000
1986	132,590,842	156,937,693	157,106,226	157,117,671	157,153,647			157,312,000
1987	142,343,290	168,914,390	169,044,615	169,201,722				169,573,000
1988	160,433,010	196,490,920	197,001,724					197,359,000
1989	188,814,158	221,438,627						222,309,000
1990	226,138,210							263,002,000

Accident Year Ending <u>6/30</u>	Cumulative Percentage Paid						
	<u>12</u>	<u>24</u>	<u>36</u>	<u>48</u>	<u>60</u>	<u>72</u>	<u>84</u>
1984	0.839	0.996	0.999	1.000	0.999	1.000	1.000
1985	0.787	0.997	0.999	1.000	1.000	1.000	
1986	0.843	0.998	0.999	0.999	0.999		
1987	0.839	0.996	0.997	0.998			
1988	0.813	0.996	0.998				
1989	0.849	0.996					
1990	0.860						
Avg Cum Pct.	0.833	0.997	0.998	0.999	0.999	1.000	1.000
Incremental Pct.	0.833	0.164	0.002	0.000	0.000	0.000	0.000
Incremental LDF	1.196	1.002	1.000	1.000	1.000	1.000	—
Cumulative LDF	1.201	1.004	1.002	1.001	1.001	1.000	1.000

Extended T=11 Pattern Using a Bondy Parameter of 0.50 From Last Observed Point							
	<u>84</u>	<u>96</u>	<u>108</u>	<u>120</u>	<u>132</u>	<u>144</u>	<u>156</u>
Cum Pct.	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Incremental Pct.	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Incremental LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Cumulative LDF	1.000	1.000	1.000	1.000	1.000	1.000	1.000

* Note: Ultimate Loss from Appendix 3, Exhibit 3, Page 16, Column 9

William M. Mercer Limited

Technical Appendix**Calculation of Discount Factor****Third Party Liability - Bodily Injury Liability, Uninsured Motorist -
Bodily Injury Liability, Underinsured Motorist, Quebec Benefits****Appendix 2****Exhibit 2****Page 1 of 8**

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	4.0%	0.5	0.960	3.8%
2	14.0%	1.5	0.885	12.4%
3	18.2%	2.5	0.816	14.8%
4	16.8%	3.5	0.752	12.6%
5	15.4%	4.5	0.693	10.7%
6	12.7%	5.5	0.638	8.1%
7	8.6%	6.5	0.588	5.1%
8	5.0%	7.5	0.542	2.7%
9	2.6%	8.5	0.500	1.3%
10	1.3%	9.5	0.461	0.6%
11	0.7%	10.5	0.425	0.3%
12	0.3%	11.5	0.391	0.1%
13	0.2%	12.5	0.361	0.1%
14	0.1%	13.5	0.332	0.0%
TOTAL	100.0%	--	--	72.7%

Average Discount Factor = 0.727

Notes:

(2) From Exhibit 1, Page 1.

(3) Assumes payments are made evenly throughout the year.

(4) $1/[1.085]^n$ * Column (3).

(5) Column (2) x Column (4).

For reasons of credibility, the bodily injury liability discount factor is assumed to be applicable for uninsured motorist - bodily injury, underinsured motorist, and Quebec benefits.

Technical Appendix
Calculation of Discount Factor
Income Benefits

Appendix 2
Exhibit 2
Page 2 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	28.8%	0.5	0.960	27.7%
2	31.4%	1.5	0.885	27.8%
3	11.9%	2.5	0.816	9.7%
4	6.4%	3.5	0.752	4.8%
5	5.7%	4.5	0.693	3.9%
6	4.4%	5.5	0.638	2.8%
7	4.3%	6.5	0.588	2.5%
8	3.5%	7.5	0.542	1.9%
9	1.8%	8.5	0.500	0.9%
10	0.9%	9.5	0.461	0.4%
11	0.5%	10.5	0.425	0.2%
12	0.2%	11.5	0.391	0.1%
13	0.1%	12.5	0.361	0.0%
14	0.1%	13.5	0.332	0.0%
15	0.0%	14.5	0.306	0.0%
TOTAL	100.0%	—	—	82.9%

Average Discount Factor = 0.829

Notes:

- (2) From Exhibit 1, Page 2.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Medical Benefits

Appendix 2
Exhibit 2
Page 3 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	19.4%	0.5	0.960	18.6%
2	31.4%	1.5	0.885	27.8%
3	19.5%	2.5	0.816	15.9%
4	12.5%	3.5	0.752	9.4%
5	10.3%	4.5	0.693	7.1%
6	3.5%	5.5	0.638	2.2%
7	1.1%	6.5	0.588	0.6%
8	1.1%	7.5	0.542	0.6%
9	0.6%	8.5	0.500	0.3%
10	0.3%	9.5	0.461	0.1%
11	0.1%	10.5	0.425	0.0%
12	0.1%	11.5	0.391	0.0%
13	0.0%	12.5	0.361	0.0%
TOTAL	100.0%	--	--	82.9%
Average Discount Factor =				0.829

Notes:

- (2) From Exhibit 1, Page 3.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Death Benefits

Appendix 2
Exhibit 2
Page 4 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	64.9%	0.5	0.960	62.3%
2	26.0%	1.5	0.885	23.0%
3	2.8%	2.5	0.816	2.3%
4	4.4%	3.5	0.752	3.3%
5	0.0%	4.5	0.693	0.0%
6	1.0%	5.5	0.638	0.6%
7	0.0%	6.5	0.588	0.0%
8	0.4%	7.5	0.542	0.2%
9	0.2%	8.5	0.500	0.1%
10	0.1%	9.5	0.461	0.0%
11	0.1%	10.5	0.425	0.0%
12	0.0%	11.5	0.391	0.0%
13	0.0%	12.5	0.361	0.0%
TOTAL	100.0%	--	--	92.0%

Average Discount Factor = 0.920

Notes:

- (2) From Exhibit 1, Page 4.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Funeral Benefits

Appendix 2
Exhibit 2
Page 5 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	66.5 %	0.5	0.960	63.8 %
2	30.7 %	1.5	0.885	27.2 %
3	1.4 %	2.5	0.816	1.1 %
4	0.8 %	3.5	0.752	0.6 %
5	0.2 %	4.5	0.693	0.1 %
6	0.4 %	5.5	0.638	0.3 %
7	0.0 %	6.5	0.588	0.0 %
8	0.0 %	7.5	0.542	0.0 %
9	0.0 %	8.5	0.500	0.0 %
10	0.0 %	9.5	0.461	0.0 %
11	0.0 %	10.5	0.425	0.0 %
12	0.0 %	11.5	0.391	0.0 %
13	0.0 %	12.5	0.361	0.0 %
TOTAL	100.0 %	--	--	93.1 %

Average Discount Factor = 0.931

Notes:

- (2) From Exhibit 1, Page 5.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Property Damage

Appendix 2
Exhibit 2
Page 6 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	70.7%	0.5	0.960	67.9%
2	25.0%	1.5	0.885	22.1%
3	2.4%	2.5	0.816	2.0%
4	0.7%	3.5	0.752	0.5%
5	0.6%	4.5	0.693	0.4%
6	0.4%	5.5	0.638	0.3%
7	0.1%	6.5	0.588	0.0%
8	0.1%	7.5	0.542	0.0%
9	0.1%	8.5	0.500	0.0%
10	0.0%	9.5	0.461	0.0%
11	0.0%	10.5	0.425	0.0%
12	0.0%	11.5	0.391	0.0%
13	0.0%	12.5	0.361	0.0%
TOTAL	100.0%	--	--	93.2%
Average Discount Factor =				0.932

Notes:

- (2) From Exhibit 1, Page 9.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Collision

Appendix 2
Exhibit 2
Page 7 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5 %	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	99.1%	0.5	0.960	95.1%
2	2.2%	1.5	0.885	1.9%
3	-1.1%	2.5	0.816	-0.9%
4	-0.2%	3.5	0.752	-0.2%
5	0.0%	4.5	0.693	0.0%
6	0.0%	5.5	0.638	0.0%
7	0.0%	6.5	0.588	0.0%
8	0.0%	7.5	0.542	0.0%
9	0.0%	8.5	0.500	0.0%
10	0.0%	9.5	0.461	0.0%
11	0.0%	10.5	0.425	0.0%
12	0.0%	11.5	0.391	0.0%
13	0.0%	12.5	0.361	0.0%
TOTAL	100.0%	--	--	96.0%

Average Discount Factor = 0.960

Notes:

- (2) From Exhibit 1, Page 10.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

Technical Appendix
Calculation of Discount Factor
Comprehensive

Appendix 2
Exhibit 2
Page 8 of 8

Age of Development (Years)	Percentage of Losses Paid	Years to Discount	Discount Factor at 8.5%	Discounted Percentage of Losses Paid
(1)	(2)	(3)	(4)	(5)
1	83.3%	0.5	0.960	80.0%
2	16.4%	1.5	0.885	14.5%
3	0.2%	2.5	0.816	0.2%
4	0.0%	3.5	0.752	0.0%
5	0.0%	4.5	0.693	0.0%
6	0.0%	5.5	0.638	0.0%
7	0.0%	6.5	0.588	0.0%
8	0.0%	7.5	0.542	0.0%
9	0.0%	8.5	0.500	0.0%
10	0.0%	9.5	0.461	0.0%
11	0.0%	10.5	0.425	0.0%
12	0.0%	11.5	0.391	0.0%
13	0.0%	12.5	0.361	0.0%
TOTAL	100.0%	--	--	94.7%
Average Discount Factor =				0.947

Notes:

- (2) From Exhibit 1, Page 11.
- (3) Assumes payments are made evenly throughout the year.
- (4) $1/[1.085]^n$ * Column (3).
- (5) Column (2) x Column (4).

For reasons of credibility, and because it is a first party coverage, the comprehensive discount factor is assumed to be applicable for uninsured motorist - property damage.

APPENDIX 3

This appendix contains the following exhibits:

<u>Exhibit</u>	<u>Number of Pages</u>	<u>Description</u>
1	18	These pages display the historical claim frequencies for each coverage* (the 17th page contains notes). For each coverage, the claim frequencies are displayed through accident year ended 6/30/90, as reported as of 12 months of development and as estimated on an ultimate basis. Calculations of historical annual rates of change are displayed, as well as the selected annual rate of change that is used and our "long-term" trend selection (prior to adjustments for the recession or for coverage differences under Pre-OMPP, OMPP, and TRA).
2	17	These pages are similar to Exhibit 1, but are for claim severities rather than claim frequencies.
3	18	These pages are similar to Exhibit 1, but are for loss costs rather than claim frequencies. The selected annual trends that are displayed are the loss cost trends that result from our selections of claim frequency trends and claim severity trends.
4	14	These pages display the determination of the Pre-OMPP trends for each coverage**. The Pre-OMPP trends are the long-term trends, adjusted for the estimated impact of the 1989/1990 recession. These adjustments are described in Section 5 of the Actuarial Report.

<u>Exhibit</u>	<u>Number of Pages</u>	<u>Description</u>
5	14	These pages display the determination of the OMPP trends for each coverage. The OMPP trends are the Pre-OMPP trends, adjusted further, for income benefits and for medical benefits, for the estimated impact of the introduction of OMPP on June 22, 1990. These adjustments are described in Section 5 of the Actuarial Report.
6	14	These pages display the determination of the TRA trends for each coverage. The TRA trends are the OMPP trends, adjusted further, for income benefits and for medical benefits, for the assumed impact of the introduction of TRA on July 1, 1992, and also adjusted for all coverages (except comprehensive) for the assumed impact of improved safety programs on January 1, 1993. These adjustments are described in Section 5 of the Actuarial Report.
7	14	These pages are graphs of the trend assumptions, showing the long-term, Pre-OMPP, OMPP, and TRA trend assumptions. They are graphical depictions of the information contained in Exhibits 4, 5, and 6.

Trend Data and Analysis

- For Exhibits 1, 2, and 3 the coverages shown are bodily injury liability, income benefits, medical benefits, death benefits, funeral benefits, Quebec benefits, accident benefits total, uninsured motorist, underinsured motorist, property damage, collision (separately for \$100 deductible and \$200+ deductibles, and for all deductibles combined), and comprehensive (separately for \$25 deductible and \$50 deductible, and for all deductibles combined).
- For Exhibits 4, 5, 6, and 7 the coverages shown are bodily injury liability, income benefits, medical benefits, death benefits, funeral benefits, Quebec benefits, accident benefits total, uninsured motorist, underinsured motorist, property damage, collision (separately for \$100 deductible and \$200+ deductibles, and for all deductibles combined), and comprehensive (separately for \$25 deductible and \$50 deductible, and for all deductibles combined). There is also a page for medical benefits frequency, which is used for the costing of the medical benefits coverage.

Technical Appendix
Claim Frequency Trend Calculation
Bodily Injury Liability

Appendix 3
Exhibit I
Page I of 18

Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis			Ultimate Basis						
		Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1978	3,190,759	31,544	0.9886	---		30,994	1.000	30,994	0.9714	---	
1979	3,346,970	30,811	0.9206	-6.9%		28,997	1.000	28,997	0.8664	-10.8%	
1980	3,447,950	30,704	0.8905	-3.3%		30,335	1.000	30,335	0.8798	1.5%	
1981	3,473,173	31,511	0.9073	1.9%		30,791	1.000	30,791	0.8865	0.8%	
1982	3,500,941	28,794	0.8225	-9.3%		30,027	1.000	30,027	0.8577	-3.2%	
1983	3,550,812	30,048	0.8462	2.9%		30,569	1.000	30,569	0.8609	0.4%	
1984	3,694,094	35,308	0.9558	13.0%		34,204	0.999	34,170	0.9250	7.4%	
1985	3,821,327	39,319	1.0289	7.6%		40,046	0.996	39,886	1.0438	12.8%	
1986	3,973,939	42,705	1.0746	4.4%	10%	43,321	0.989	42,844	1.0781	3.3%	10%
1987	4,097,975	45,862	1.1191	4.1%	15%	46,599	0.975	45,434	1.1087	2.8%	15%
1988	4,269,674	52,337	1.2258	9.5%	20%	53,704	0.954	51,234	1.2000	8.2%	20%
1989	4,476,849	54,605	1.2197	-0.5%	25%	57,175	0.942	53,859	1.2031	0.3%	25%
1990	4,626,219	55,613	1.2021	-1.4%	30%	56,605	0.931	52,699	1.1391	-5.3%	30%
5 Year Weighted Change:				2.4%						0.9%	
Least 12 Year Fitted Change:				3.8%						3.7%	
Least 5 Year Fitted Change:				3.2%						1.9%	
Selected Change:										0.9%	

5 Year Weighted Change:

Least 12 Year Fitted Change:

Least 5 Year Fitted Change:

Selected Change:

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Income Benefits

Appendix 3
Exhibit 1
Page 2 of 18

		12 Month Basis					Ultimate Basis				
Accident Year	Exposures	Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurred Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
Ended 6/30	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1984	3,656,935	18,957	0.5184	---		16,091	0.999	16,075	0.4396	---	
1985	3,872,518	22,608	0.5838	12.6%		19,351	0.999	19,332	0.4992	13.6%	10%
1986	3,928,916	24,176	0.6153	5.4%	10%	20,543	0.997	20,481	0.5213	4.4%	10%
1987	4,061,519	25,416	0.6258	1.7%	15%	20,761	0.991	20,574	0.5066	-2.8%	15%
1988	4,259,750	30,115	0.7070	13.0%	20%	25,108	0.979	24,581	0.5771	13.9%	20%
1989	4,458,843	32,852	0.7368	4.2%	25%	28,078	0.952	26,730	0.5995	3.9%	25%
1990	4,580,194	33,091	0.7225	-1.9%	30%	31,016	0.886	27,480	0.6000	0.1%	30%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Medical Benefits

Appendix 3
Exhibit 1
Page 3 of 18

		12 Month Basis					Ultimate Basis					
Accident Year	Exposure	Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurred Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1984	3,656,935	25,645	0.7013	---		20,554	1.000	20,554	0.5621	---		
1985	3,872,518	28,805	0.7438	6.1%		24,444	0.997	24,371	0.6293	12.0%	10%	
1986	3,928,916	31,568	0.8035	8.0%	10%	26,172	0.992	25,963	0.6608	5.0%	15%	
1987	4,061,519	34,410	0.8472	5.4%	15%	26,099	0.981	25,603	0.6304	-4.6%	20%	
1988	4,259,750	39,686	0.9317	10.0%	20%	29,674	0.965	28,635	0.6722	6.6%	25%	
1989	4,458,843	43,082	0.9662	3.7%	25%	33,340	0.935	31,173	0.6991	4.0%	30%	
1990	4,580,194	44,083	0.9625	-0.4%	30%	39,157	0.841	32,931	0.7190	2.8%		
5 Year Weighted Change:				4.4%						3.0%		
Latest 7 Year Fitted Change:				6.0%						3.5%		
Latest 5 Year Fitted Change:				5.0%						2.8%		
Selected Change:										3.0%		

See page 17, Notes on Frequency Trend Calculation Exhibits.

Technical Appendix
Claim Frequency Trend Calculation
Death Benefits

Appendix 3
Exhibit 1
Page 4 of 18

12 Month Basis

Accident Year	Exposures	Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)
Ended 6/30	(2)				
1984	3,656,935	502	0.0137	---	
1985	3,872,518	566	0.0146	6.6%	
1986	3,928,916	510	0.0130	-11.0%	10%
1987	4,061,519	430	0.0106	-18.5%	15%
1988	4,259,750	464	0.0109	2.8%	20%
1989	4,458,843	523	0.0117	7.3%	25%
1990	4,580,194	532	0.0116	-0.9%	30%

5 Year Weighted Change: -1.8%

Least 7 Year Fitted Change: -3.9%

Least 5 Year Fitted Change: -1.3%

Selected Change:

Ultimate Basis

Incurred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
471	1.000	471	0.0129	---	
452	0.994	449	0.0116	-10.1%	10%
436	0.991	432	0.0110	-5.2%	15%
382	0.976	373	0.0092	-16.4%	20%
410	0.948	389	0.0091	-1.1%	25%
485	0.914	443	0.0099	8.8%	30%
523	0.852	446	0.0097	-2.0%	

-1.6%

-4.7%

-1.8%

0.9%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Funeral Benefits

Appendix 3
Exhibit 1
Page 5 of 18

Accident Year	Exposure (2)	12 Month Basis			
		Inferred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change in Claim Frequency (5)	Assigned Weight (6)
1984	3,656,935	263	0.0072	---	
1985	3,872,518	365	0.0094	30.6%	
1986	3,928,916	435	0.0111	18.1%	10%
1987	4,061,519	450	0.0111	0.0%	15%
1988	4,259,750	545	0.0128	15.3%	20%
1989	4,458,843	588	0.0132	3.1%	25%
1990	4,580,194	622	0.0136	3.0%	30%

5 Year Weighted Change: 6.5%

Latest 7 Year Fitted Change: 10.2%

Latest 5 Year Fitted Change: 6.0%

Selected Change:

Ultimate Basis					
Inferred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change in Claim Frequency (11)	Assigned Weight (12)
265	1.000	265	0.0072	---	
349	0.993	347	0.0090	25.0%	
413	0.981	405	0.0103	14.4%	10%
411	0.970	399	0.0098	-4.9%	15%
506	0.952	482	0.0113	15.3%	20%
555	0.912	506	0.0113	0.0%	25%
609	0.862	525	0.0115	1.8%	30%
				4.3%	
				7.2%	
				3.7%	
				0.9%	

See page 17, Notes on Frequency Trend Calculation Exhibit.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Quebec Benefits

Appendix 3
Exhibit 1
Page 6 of 18

		12 Month Basis					Ultimate Basis					
Accident Year	Exposures	Inced Number of Claims at 12 Month	Claim Frequency at 12 Month	Percent Change In Claim Frequency	Assigned Weight		Inced Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
(1)	(2)	(3)	(4)	(5)	(6)		(7)	(8)	(9)	(10)	(11)	(12)
1984	3,656,935	76	0.00208	---	---		78	1.000	78	0.00213	---	---
1985	3,872,518	135	0.00349	67.7%	---		123	1.000	123	0.00318	48.9%	10%
1986	3,928,916	141	0.00359	2.9%	10%		144	0.984	142	0.00361	13.8%	15%
1987	4,061,519	135	0.00332	-7.4%	15%		127	0.984	125	0.00308	-14.8%	20%
1988	4,259,750	99	0.00232	-30.1%	20%		94	0.976	92	0.00216	-29.8%	25%
1989	4,458,843	125	0.00280	20.6%	30%		118	0.974	115	0.00258	19.4%	30%
1990	4,580,194	126	0.00275	-1.9%	---		123	0.903	111	0.00242	-6.0%	---
5 Year Weighted Change:											-3.7%	
Least 7 Year Fitted Change:											-1.9%	
Least 5 Year Fitted Change:											-9.3%	
Selected Change:											0.0%	

See page 17, Notes on Frequency Trend Calculation Exhibits

Technical Appendix

Claim Frequency Trend Calculation

Accident Benefits Total

Appendix 3
Exhibit I
Page 7 of 18

Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 6/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1981	3,464,170	50,641	1.4619	---		43,692	1.000	43,692	1.2613	---	
1982	3,500,941	45,522	1.3003	-11.1%		38,714	1.000	38,714	1.1058	-12.3%	
1983	3,550,812	40,702	1.1463	-11.8%		35,400	0.999	35,365	0.9960	-9.9%	
1984	3,694,094	47,429	1.2839	12.0%		39,829	0.998	39,749	1.0760	8.0%	
1985	3,820,877	55,162	1.4437	12.4%		47,618	0.995	47,380	1.2400	15.2%	
1986	3,924,159	58,596	1.4932	3.4%	10%	50,603	0.990	50,097	1.2766	3.0%	10%
1987	4,059,850	62,850	1.5481	3.7%	15%	51,183	0.981	50,211	1.2368	-3.1%	15%
1988	4,264,831	73,983	1.7347	12.1%	20%	60,598	0.967	58,598	1.3740	11.1%	20%
1989	4,445,135	80,162	1.8034	4.0%	25%	68,490	0.932	63,833	1.4360	4.5%	25%
1990	4,537,788	81,592	1.7981	-0.3%	30%	81,592	0.827	67,477	1.4870	3.6%	30%
5 Year Weighted Change:				4.2%						4.3%	
Latest 10 Year Fitted Change:				5.7%						4.7%	
Latest 5 Year Fitted Change:				6.2%						5.9%	

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Uninsured Motorist

Appendix 3
Exhibit 1
Page 8 of 18

		12 Month Basis					Ultimate Basis						
Accident Year	Exposure	Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight		Incurred Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight	
													(1)
1984	3,656,935	1,465	0.0401	---			1,680	0.987	1,658	0.0453	---		
1985	3,872,518	1,811	0.0468	16.7%			2,179	0.977	2,129	0.0550	21.4%		
1986	3,928,916	2,042	0.0520	11.1%	10%		2,477	0.954	2,363	0.0601	9.3%	10%	
1987	4,061,519	2,396	0.0590	13.5%	15%		2,899	0.923	2,676	0.0659	9.7%	15%	
1988	4,259,750	3,141	0.0737	24.9%	20%		4,041	0.901	3,641	0.0855	29.7%	20%	
1989	4,458,843	3,096	0.0694	-5.8%	25%		4,495	0.904	4,063	0.0911	6.5%	25%	
1990	4,580,194	3,611	0.0788	13.5%	30%		4,368	0.988	4,316	0.0942	3.4%	30%	
5 Year Weighted Change:											11.0%		
Latest 7 Year Fitted Change:											13.6%		
Latest 5 Year Fitted Change:											13.0%		
Selected Change:											11.0%		

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Underinsured Motorist

Appendix 3
Exhibit 1
Page 9 of 18

			12 Month Basis				Ultimate Basis				
Accident Year	Exposure	Incurring Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurring Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1984	3,108,395	130	0.0042	----		155	1.004	156	0.0050	----	
1985	3,247,745	121	0.0037	-11.9%		149	0.930	139	0.0043	-14.0%	10%
1986	3,335,535	121	0.0036	-2.7%	10%	148	0.869	129	0.0039	-9.3%	15%
1987	3,456,622	135	0.0039	8.3%	15%	167	0.813	136	0.0039	0.0%	20%
1988	3,669,178	119	0.0032	-17.9%	20%	209	0.794	166	0.0045	15.4%	25%
1989	3,866,432	143	0.0037	15.6%	30%	209	0.829	173	0.0045	0.0%	30%
1990	4,065,352	139	0.0034	-8.1%		160	0.965	154	0.0038	-15.6%	
5 Year Weighted Change:											
				-1.1%							
Latest 7 Year Fitted Change:				-2.6%							
Latest 5 Year Fitted Change:				-1.7%							
Selected Change:											

See page 17, Notes on Frequency Trend Calculation Exhibits.

Technical Appendix
Claim Frequency Trend Calculation
Property Damage

Appendix 3
Exhibit I
Page 10 of 18

Accident Year Ended 6/30	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurred Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1978	3,190,759	195,643	6.1316	---	---	199,316	1.000	199,316	6.2467	---	---
1979	3,346,970	201,783	6.0288	-1.7%	---	205,431	1.000	205,431	6.1378	-1.7%	---
1980	3,447,950	194,869	5.6517	-6.3%	---	200,617	1.000	200,617	5.8184	-5.2%	---
1981	3,473,173	204,419	5.8857	4.1%	---	205,339	1.000	205,339	5.9121	1.6%	---
1982	3,500,941	184,821	5.2792	-10.3%	---	192,684	1.000	192,684	5.5038	-6.9%	---
1983	3,550,812	156,328	4.4026	-16.6%	---	160,408	1.000	160,408	4.5175	-17.9%	---
1984	3,694,094	171,152	4.6331	5.2%	---	175,169	1.000	175,169	4.7419	5.0%	---
1985	3,821,327	185,025	4.8419	4.5%	---	190,358	1.000	190,358	4.9815	5.1%	---
1986	3,973,939	184,238	4.6362	-4.2%	10%	186,825	1.000	186,825	4.7013	-5.6%	10%
1987	4,097,975	173,606	4.2364	-8.6%	15%	175,106	0.999	174,931	4.2687	-9.2%	15%
1988	4,269,674	183,227	4.2914	1.3%	20%	184,714	0.996	183,975	4.3089	0.9%	20%
1989	4,476,849	185,479	4.1431	-3.5%	25%	186,687	0.991	185,007	4.1325	-4.1%	25%
1990	4,626,219	182,003	3.9342	-5.0%	30%	186,521	0.982	183,164	3.9593	-4.2%	30%
5 Year Weighted Change:											
Latest 12 Year Fitted Change:											
Latest 5 Year Fitted Change:											
Selected Change:											
-3.8%											
-3.8%											
-3.4%											

5 Year Weighted Change:
Latest 12 Year Fitted Change:
Latest 5 Year Fitted Change:

Selected Change:

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
 Claim Frequency Trend Calculation
 Collision (\$100 Deductible)

Appendix 3
 Exhibit I
 Page 11 of 18

12 Month Basis						Ultimate Basis					
Accident Year Ended 6/30	Exposure (2)	Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 6/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1981	1,691,532	162,770	0.0962	---		156,799	1.000	156,799	0.0927	---	
1982	1,696,473	159,825	0.0942	-2.1%		160,577	1.000	160,577	0.0947	2.2%	
1983	1,614,389	128,731	0.0797	-15.4%		126,406	1.000	126,406	0.0783	-17.3%	
1984	1,593,047	130,822	0.0821	3.0%		128,157	1.000	128,157	0.0804	2.7%	
1985	1,591,422	138,017	0.0867	5.6%		133,827	1.000	133,827	0.0841	4.6%	
1986	1,562,988	130,592	0.0836	-3.6%	10%	125,428	1.000	125,428	0.0802	-4.6%	10%
1987	1,450,911	108,304	0.0746	-10.8%	15%	101,549	0.999	101,447	0.0699	-12.8%	15%
1988	1,329,563	98,556	0.0741	-0.7%	20%	90,531	0.997	90,259	0.0679	-2.9%	20%
1989	1,203,600	84,544	0.0702	-5.3%	25%	78,510	0.988	77,568	0.0644	-5.2%	25%
1990	1,066,834	72,954	0.0684	-2.6%	30%	72,954	0.926	67,555	0.0633	-1.7%	30%

5 Year Weighted Change:

-4.2%

10 Year Fitted Change:

-3.5%

5 Year Fitted Change:

-4.5%

Selected Change:

-4.8%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Collision (\$200 and Higher Deductibles)

Appendix 3
Exhibit 1
Page 12 of 18

12 Month Basis					Ultimate Basis						
Accident Year	Exposure (2)	Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 6/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1981	864,471	71,756	0.0830	---		68,213	1.000	68,213	0.0789	---	
1982	920,981	75,073	0.0815	-1.8%		73,565	1.000	73,565	0.0799	1.3%	
1983	1,026,648	68,017	0.0663	-18.7%		66,028	1.000	66,028	0.0643	-19.5%	
1984	1,180,590	80,793	0.0684	3.2%		77,947	1.000	77,947	0.0660	2.6%	
1985	1,339,947	104,222	0.0778	13.7%		100,222	1.000	100,222	0.0748	13.3%	
1986	1,506,372	120,246	0.0798	2.6%	10%	114,734	0.999	114,619	0.0761	1.7%	10%
1987	1,744,348	132,882	0.0762	-4.5%	15%	122,339	0.998	122,094	0.0700	-8.0%	15%
1988	2,059,811	163,607	0.0794	4.2%	20%	147,995	0.995	147,255	0.0715	2.1%	20%
1989	2,377,527	185,437	0.0780	-1.8%	25%	170,493	0.984	167,765	0.0706	-1.3%	25%
1990	2,576,960	197,140	0.0765	-1.9%	30%	197,140	0.908	179,003	0.0695	-1.6%	30%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Collision (All Deductibles Combined)

Appendix 3
Exhibit I
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Accident Year Ended 6/30	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurred Number of Claims At 12/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
		(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1978	2,201,427	186,430	8.4686	---	---	177,890	1.000	177,890	8.0807	---	---
1979	2,378,086	212,975	8.9557	5.8%	5.8%	202,458	1.000	202,458	8.5135	5.4%	5.4%
1980	2,512,082	222,766	8.8678	-1.0%	-1.0%	215,320	1.000	215,320	8.5714	0.7%	0.7%
1981	2,556,003	239,686	9.3774	5.7%	5.7%	229,962	1.000	229,962	8.9969	5.0%	5.0%
1982	2,617,454	240,066	9.1717	-2.2%	-2.2%	239,293	1.000	239,293	9.1422	1.6%	1.6%
1983	2,641,037	201,076	7.6135	-17.0%	-17.0%	196,668	1.000	196,668	7.4466	-18.5%	-18.5%
1984	2,773,637	217,781	7.8518	3.1%	3.1%	211,935	1.000	211,935	7.6411	2.6%	2.6%
1985	2,931,369	247,643	8.4480	7.6%	7.6%	239,294	1.000	239,294	8.1632	6.8%	6.8%
1986	3,107,728	257,816	8.2960	-1.8%	-1.8%	245,349	1.000	245,349	7.8948	-3.3%	-3.3%
1987	3,229,164	246,948	7.6474	-7.8%	-7.8%	228,550	1.000	228,550	7.0777	-10.3%	-10.3%
1988	3,411,251	267,255	7.8345	2.4%	2.4%	242,847	0.997	242,118	7.0976	0.3%	0.3%
1989	3,619,645	277,250	7.6596	-2.2%	-2.2%	250,155	0.992	248,154	6.8558	-3.4%	-3.4%
1990	3,700,562	275,055	7.4328	-3.0%	-3.0%	256,887	0.963	247,382	6.6850	-2.5%	-2.5%
5 Year Weighted Change: -2.3%											
Latest 12 Year Fitted Change: -1.9%											
Latest 5 Year Fitted Change: -2.2%											

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Comprehensive (\$25 Deductible)

Appendix 3
Exhibit 1
Page 14 of 18

Accident Year Ended 6/30	Exposure (1)	12 Month Basis				Ultimate Basis					
		Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 6/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	Assigned Weight (12)
1981	2,717,421	239,407	0.0881	---	---	269,880	1.000	269,880	0.0993	---	---
1982	2,918,019	263,134	0.0902	2.4%	2.4%	295,629	1.000	295,629	0.1013	2.0%	2.0%
1983	2,829,847	218,305	0.0771	-14.5%	-14.5%	238,513	1.000	238,513	0.0843	-16.8%	-16.8%
1984	2,542,829	179,333	0.0705	-8.6%	-8.6%	201,390	1.000	201,390	0.0792	-6.0%	-6.0%
1985	2,253,531	170,491	0.0757	7.4%	7.4%	190,274	1.000	190,274	0.0844	6.6%	6.6%
1986	1,688,458	138,634	0.0821	8.5%	10%	152,135	1.000	152,135	0.0901	6.8%	10%
1987	1,300,009	100,961	0.0777	-5.4%	15%	110,153	1.000	110,153	0.0847	-6.0%	15%
1988	972,297	72,151	0.0742	-4.5%	20%	80,053	1.000	80,053	0.0823	-2.8%	20%
1989	824,484	62,873	0.0763	2.8%	25%	69,386	1.000	69,386	0.0842	2.3%	25%
1990	693,075	55,674	0.0803	5.2%	30%	55,674	1.100	61,241	0.0884	5.0%	30%

5 Year Weighted Change: 1.3%

10 Year Fitted Change: -1.3%

5 Year Fitted Change: -0.4%

Selected Change: 1.3%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Comprehensive (\$50 Deductible)

Appendix 3
Exhibit 1
Page 15 of 18

12 Month Basis					Ultimate Basis						
Accident Year	Exposure	Incurred Number of Claims at 12 Months	Claim Frequency at 12 Months	Percent Change In Claim Frequency	Assigned Weight	Incurred Number of Claims At 6/90	Selected Develop. Factor	Ultimate Number of Claims	Ultimate Claim Frequency	Percent Change In Claim Frequency	Assigned Weight
Ended 6/30	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1981	122,965	9,850	0.0801	---		11,028	1.000	11,028	0.0897	---	
1982	201,541	16,646	0.0826	3.1%		20,184	1.000	20,184	0.1001	11.6%	
1983	434,611	53,592	0.1233	49.3%		61,130	1.000	61,130	0.1407	40.6%	
1984	868,715	109,241	0.1258	2.0%		119,921	1.000	119,921	0.1380	-1.9%	
1985	1,311,488	143,867	0.1097	-12.8%		163,049	1.000	163,049	0.1243	-9.9%	
1986	1,991,119	173,315	0.0870	-20.7%	10%	192,082	1.000	192,082	0.0965	-22.4%	10%
1987	2,473,897	205,026	0.0829	-4.7%	15%	226,314	1.000	226,314	0.0915	-5.2%	15%
1988	2,955,904	253,056	0.0856	3.3%	20%	280,638	1.000	280,638	0.0949	3.7%	20%
1989	3,211,930	289,096	0.0900	5.1%	25%	316,580	1.000	316,580	0.0986	3.9%	25%
1990	3,290,769	316,617	0.0962	6.9%	30%	316,617	1.102	348,912	0.1060	7.5%	30%
5 Year Weighted Change:					1.2%					0.9%	
10 Year Fitted Change:					-0.6%					-1.2%	
5 Year Fitted Change:					2.9%					2.7%	
Selected Change:										0.9%	

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Frequency Trend Calculation
Comprehensive (All Deductibles Combined)

Appendix 3
Exhibit 1
Page 16 of 18

Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					Assigned Weight (12)
		Incurred Number of Claims at 12 Months (3)	Claim Frequency at 12 Months (4)	Percent Change In Claim Frequency (5)	Assigned Weight (6)	Incurred Number of Claims At 12/90 (7)	Selected Develop. Factor (8)	Ultimate Number of Claims (9)	Ultimate Claim Frequency (10)	Percent Change In Claim Frequency (11)	
1978	2,443,789	175,103	7.1652	---	---	193,045	1.000	193,045	7.8994	---	---
1979	2,626,254	216,386	8.2393	15.0%	15.0%	236,909	1.000	236,909	9.0208	14.2%	14.2%
1980	2,778,342	245,019	8.8189	7.0%	7.0%	270,941	1.000	270,941	9.7519	8.1%	8.1%
1981	2,840,386	259,227	9.1265	3.5%	3.5%	292,425	1.000	292,425	10.2953	5.6%	5.6%
1982	3,119,560	290,971	9.3273	2.2%	2.2%	328,761	1.000	328,761	10.5387	2.4%	2.4%
1983	3,264,458	282,773	8.6622	-7.1%	-7.1%	311,928	1.000	311,928	9.5553	-9.3%	-9.3%
1984	3,411,544	298,219	8.7415	0.9%	0.9%	331,569	1.000	331,569	9.7190	1.7%	1.7%
1985	3,585,019	326,942	9.1197	4.3%	4.3%	367,693	1.000	367,693	10.2564	5.5%	5.5%
1986	3,828,656	327,347	8.5499	-6.2%	-6.2%	360,479	1.000	360,479	9.4153	-8.2%	-8.2%
1987	3,932,284	322,948	8.2127	-3.9%	-3.9%	354,679	1.000	354,679	9.0197	-4.2%	-4.2%
1988	4,129,665	344,352	8.3385	1.5%	1.5%	381,554	1.000	381,554	9.2393	2.4%	2.4%
1989	4,312,253	377,598	8.7564	5.0%	5.0%	412,994	1.000	412,994	9.5772	3.7%	3.7%
1990	4,415,239	406,770	9.2129	5.2%	5.2%	445,091	1.003	446,426	10.1110	5.6%	5.6%
5 Year Weighted Change:											1.6%
Latest 12 Year Fitted Change:											-0.2%
Latest 5 Year Fitted Change:											2.0%

See page 17, Notes on Frequency Trend Calculation Exhibits.

William M. Mercer Limited

Column

- (1) For bodily injury liability (page 1), property damage (page 10), collision (page 13), and comprehensive (page 16), the first three years shown, 1978-1980, are the accident years ended December 31.
- (2) The exposures for accident years ended June 30, 1987 through June 30, 1990 are determined from the IBC Bulletin No. S.D. 91-10; the only exceptions are for the accident benefits total (page 7), collision \$100 deductible (page 11), collision \$200 and higher deductibles (page 12), comprehensive \$25 deductible (page 14), comprehensive \$50 deductible (page 15) where the exposures for the corresponding accident years are determined from earlier IBC data sources. Exposures for prior accident years for all coverages are determined from earlier IBC data sources.
- (3) The claim counts for the accident years ended June 30, 1984 through June 30, 1990 are determined from the IBC Bulletin No. S.D. 91-17; the only exceptions are for those coverages identified in note (2). Claim counts for prior accident years for all coverages are determined from earlier IBC data sources.
- (4) Is equal to Column (3) divided by Column (2) times 100.
- (5) Is equal to Column (4) at the corresponding accident year minus Column (4) at the preceding accident year, all divided by Column (4) at the preceding accident year.

- (7) The claim counts for the accident years ended June 30, 1984 through June 30, 1990 are from Appendix 1, Exhibit 4, Column 6 (on the corresponding page for each coverage) which are determined from the IBC Bulletin No. S.D. 91-17; the only exceptions are for those coverages identified in note (2). Claim counts for prior accident years for all coverages are determined from earlier IBC data sources.
- (8) From Appendix 1, Exhibit 4, Column 8 (on the corresponding page for each coverage), subject to small rounding differences.
- (9) Is equal to Column (7) times Column (8).
- (10) Is equal to Column (9) divided by Column (2) times 100.
- (11) Is equal to Column (10) at the corresponding accident year minus Column (10) at the preceding accident year, all divided by Column (10) at the preceding accident year.

Technical Appendix
Claim Severity Trend Calculation
Bodily Injury Liability

Appendix 3
Exhibit 2
Page 1 of 17

Accident Year Ended 6/30 (1)	12 Month Basis				Ultimate Basis					
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1978	\$162,569	31,544	\$5,154	—		\$228,375	30,994	\$7,368	—	
1979	160,871	30,811	5,221	1.3%		296,934	28,997	10,240	39.0%	
1980	180,823	30,704	5,889	12.8%		372,762	30,335	12,288	20.0%	
1981	180,274	31,511	5,721	-2.9%		397,456	30,791	12,908	5.0%	
1982	186,197	28,794	6,467	13.0%		450,529	30,027	15,004	16.2%	
1983	216,113	30,048	7,192	11.2%		509,387	30,569	16,664	11.1%	
1984	302,471	35,308	8,567	19.1%		623,795	34,170	18,256	9.6%	
1985	377,063	39,319	9,590	11.9%		777,813	39,886	19,501	6.8%	
1986	431,253	42,705	10,098	5.3%	10%	885,273	42,844	20,663	6.0%	10%
1987	522,830	45,862	11,400	12.9%	15%	1,039,899	45,434	22,888	10.8%	15%
1988	642,554	52,337	12,277	7.7%	20%	1,255,698	51,234	24,509	7.1%	20%
1989	757,268	54,605	13,868	13.0%	25%	1,432,234	53,859	26,592	8.5%	25%
1990	813,096	55,613	14,621	5.4%	30%	1,544,991	52,699	29,317	10.2%	30%
5 Year Weighted Change:				8.9%					8.8%	
Least 12 Year Fitted Change:				10.8%					9.8%	
Least 5 Year Fitted Change:				9.8%					8.9%	
Selected Change:									8.8%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Income Benefits

Appendix 3
Exhibit 2
Page 2 of 17

Ultimate Basis										
Accident Year	Incurred Losses at 12 Months (\$000)	Incurred Number of Claims at 12 Months	Claim Severity at 12 Months	Percent Change In Claim Severity	Assigned Weight	Ultimate Losses (\$000)	Ultimate Number of Claims	Ultimate Claim Severity	Percent Change In Claim Severity	Assigned Weight
Ended 6/30	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
(1)										
1984	\$29,764	18,957	\$1,570	---	---	\$42,469	16,075	\$2,642	---	---
1985	36,573	22,608	1,618	3.1%	---	54,319	19,332	2,810	6.4%	10%
1986	38,253	24,176	1,582	-2.2%	10%	56,949	20,481	2,781	-1.0%	15%
1987	48,178	25,416	1,896	19.8%	15%	64,333	20,574	3,127	12.4%	20%
1988	59,766	30,115	1,985	4.7%	20%	77,546	24,581	3,155	0.9%	25%
1989	68,606	32,852	2,088	5.2%	25%	85,898	26,730	3,214	1.9%	30%
1990	69,963	33,091	2,114	1.2%	30%	98,147	27,480	3,572	11.1%	30%
5 Year Weighted Change:				5.4%					5.7%	
Latest 7 Year Fitted Change:				6.0%					4.8%	
Latest 5 Year Fitted Change:				7.0%					5.4%	
Selected Change:									5.7%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Medical Benefits

Appendix 3
Exhibit 2
Page 3 of 17

12 Month Basis						Ultimate Basis				
Accident Year	Incurred Losses at 12 Months (\$000)	Incurred Number of Claims at 12 Months	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
Eaded 6/30 (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1984	\$17,328	25,645	\$676	---	---	\$17,587	20,554	\$856	---	---
1985	18,201	28,805	632	-6.5%	10%	22,874	24,371	939	9.7%	10%
1986	22,090	31,568	700	10.8%	15%	26,862	25,963	1,035	10.2%	15%
1987	28,823	34,410	838	19.7%	20%	34,745	25,603	1,357	31.1%	20%
1988	36,454	39,686	919	9.7%	25%	44,186	28,635	1,543	13.7%	25%
1989	43,076	43,082	1,000	8.8%	30%	55,770	31,173	1,789	15.9%	30%
1990	49,123	44,083	1,114	11.4%	---	71,990	32,931	2,186	22.2%	---
5 Year Weighted Change:				11.6%					19.1%	
Latest 7 Year Fitted Change:				10.1%					17.4%	
Latest 5 Year Fitted Change:				11.7%					19.4%	
Selected Change:									19.1%	

See page 17, Notes on Severity Trend Calculation Exhibits.

Technical Appendix
Claim Severity Trend Calculation
Death Benefits

Appendix 3
Exhibit 2
Page 4 of 17

Accident Year Ended 6/30	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000)	Incurred Number of Claims at 12 Months	Claim Severity at 12 Months	Percent Change In Claim Severity	Assigned Weight	Ultimate Losses (\$000)	Ultimate Number of Claims	Ultimate Claim Severity	Percent Change In Claim Severity	Assigned Weight
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1984	\$4,091	502	\$8,149	---		\$4,183	471	\$8,881	---	
1985	3,982	566	7,035	-13.7%		3,614	449	8,049	-9.4%	
1986	3,878	510	7,604	8.1%	10%	3,428	432	7,935	-1.4%	10%
1987	4,170	430	9,698	27.5%	15%	3,854	373	10,332	30.2%	15%
1988	4,283	464	9,231	-4.8%	20%	3,918	389	10,072	-2.5%	20%
1989	5,149	523	9,845	6.7%	25%	4,663	443	10,526	4.5%	25%
1990	5,311	532	9,983	1.4%	30%	5,270	446	11,816	12.3%	30%
5 Year Weighted Change:				6.1%					8.7%	
Latest 7 Year Fitted Change:				5.4%					6.0%	
Latest 5 Year Fitted Change:				5.8%					8.5%	
Selected Change:									0.0%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Funeral Benefits

Appendix 3
Exhibit 2
Page 5 of 17

Accident Year Ended 6/30	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
(1)										
1984	\$350	263	\$1,331	---		\$354	265	\$1,336	---	
1985	478	365	1,310	-1.6%		471	347	1,357	1.6%	
1986	534	435	1,228	-6.3%	10%	525	405	1,296	-4.5%	10%
1987	619	450	1,376	12.1%	15%	601	399	1,506	16.2%	15%
1988	703	545	1,290	-6.3%	20%	673	482	1,396	-7.3%	20%
1989	842	588	1,432	11.0%	25%	832	506	1,644	17.8%	25%
1990	861	622	1,384	-3.4%	30%	899	525	1,712	4.1%	30%
5 Year Weighted Change:				1.7%					6.2%	
Latest 7 Year Fitted Change:				1.2%					4.4%	
Latest 5 Year Fitted Change:				2.8%					6.7%	
Selected Change:									0.0%	

See page 17, Notes on Severity Trend Calculation Exhibits.

Technical Appendix
Claim Severity Trend Calculation
Quebec Benefits

Appendix 3
Exhibit 2
Page 6 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1984	\$472	76	\$6,211	---		\$780	78	\$10,000	---	
1985	610	135	4,519	-27.2%		1,219	123	9,911	-0.9%	
1986	643	141	4,560	0.9%	10%	916	142	6,451	-34.9%	10%
1987	963	135	7,133	56.4%	15%	895	125	7,160	11.0%	15%
1988	881	99	8,899	24.8%	20%	946	92	10,283	43.6%	20%
1989	549	125	4,392	-50.6%	25%	741	115	6,443	-37.3%	25%
1990	1,218	126	9,667	120.1%	30%	1,904	111	17,153	166.2%	30%
5 Year Weighted Change:				36.9%					47.4%	
Latest 7 Year Fitted Change:				7.2%					4.5%	
Latest 5 Year Fitted Change:				10.7%					20.3%	
Selected Change:									5.0%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Accident Benefits Total

Appendix 3
Exhibit 2
Page 7 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Inurred Losses at 12 Months (\$000) (2)	Inurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1981	\$49,407	50,641	\$976	---	---	\$71,500	43,692	\$1,636	---	---
1982	50,250	45,522	1,104	13.1%	10%	77,095	38,714	1,991	21.7%	10%
1983	49,405	40,702	1,214	10.0%	15%	74,512	35,365	2,107	5.8%	15%
1984	61,688	47,429	1,301	7.2%	20%	87,410	39,749	2,199	4.4%	20%
1985	72,359	55,162	1,312	0.8%	25%	115,238	47,380	2,432	10.6%	25%
1986	79,662	58,596	1,360	3.7%	30%	127,702	50,097	2,549	4.8%	30%
1987	98,506	62,850	1,567	15.2%	10%	150,895	50,211	3,005	17.9%	10%
1988	128,175	73,983	1,732	10.5%	15%	202,737	58,598	3,460	15.1%	15%
1989	144,564	80,162	1,803	4.1%	20%	229,613	63,833	3,597	4.0%	20%
1990	154,763	81,592	1,897	5.2%	30%	239,573	67,477	3,550	-1.3%	30%
5 Year Weighted Change:				7.3%					6.8%	
Latest 10 Year Fitted Change:				-6.8%					8.8%	
Latest 5 Year Fitted Change:				-10.8%					9.4%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Uninsured Motorist

Appendix 3
Exhibit 2
Page 8 of 17

Accident Year	12 Month Basis					Ultimate Basis				
	Inurred Losses at 12 Months (\$000)	Inurred Number of Claims at 12 Months	Claim Severity at 12 Months	Percent Change In Claim Severity	Assigned Weight	Ultimate Losses (\$000)	Ultimate Number of Claims	Ultimate Claim Severity	Percent Change In Claim Severity	Assigned Weight
Ended 6/30	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1984	\$9,021	1,465	\$6,158	---		\$21,842	1,658	\$13,174	---	
1985	10,916	1,811	6,028	-2.1%		32,867	2,129	15,438	17.2%	
1986	14,354	2,042	7,029	16.6%	10%	38,675	2,363	16,367	6.0%	10%
1987	16,125	2,396	6,730	-4.3%	15%	43,360	2,676	16,203	-1.0%	15%
1988	26,370	3,141	8,395	24.7%	20%	79,666	3,641	21,880	35.0%	20%
1989	27,124	3,096	8,761	4.4%	25%	90,770	4,063	22,341	2.1%	25%
1990	29,176	3,611	8,080	-7.8%	30%	99,813	4,316	23,126	3.5%	30%
5 Year Weighted Change:				4.7%					9.0%	
Latest 7 Year Fitted Change:				6.4%					10.2%	
Latest 5 Year Fitted Change:				5.6%					10.7%	
Selected Change:									9.0%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Underinsured Motorist

Appendix 3
Exhibit 2
Page 9 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Inurred Losses at 12 Months (\$000) (2)	Inurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1984	\$2,367	130	\$18,208	---	---	\$13,997	156	\$89,724	---	---
1985	2,688	121	22,215	---	---	15,643	139	112,540	25.4%	10%
1986	3,851	121	31,826	43.3%	10%	13,592	129	105,364	-6.4%	10%
1987	4,195	135	31,074	-2.4%	15%	12,296	136	90,412	-14.2%	15%
1988	5,257	119	44,176	42.2%	20%	16,247	166	97,873	8.3%	20%
1989	6,107	143	42,706	-3.3%	25%	23,670	173	136,821	39.8%	25%
1990	4,515	139	32,482	-23.9%	30%	16,523	154	107,292	-21.6%	30%
5 Year Weighted Change:				4.4%					2.4%	
Latest 7 Year Fitted Change:				12.8%					3.1%	
Latest 5 Year Fitted Change:				3.7%					4.6%	
Selected Change:									2.4%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Property Damage

Appendix 3
Exhibit 2
Page 10 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1978	\$147,288	195,643	\$753	---		\$147,782	199,316	\$741	---	
1979	173,013	201,783	857	13.8%		178,560	205,431	869	17.3%	
1980	185,530	194,869	952	11.1%		197,193	200,617	983	13.1%	
1981	203,552	204,419	996	4.6%		212,502	205,339	1,035	5.3%	
1982	207,585	184,821	1,123	12.8%		217,537	192,684	1,129	9.1%	
1983	185,594	156,328	1,187	5.7%		192,103	160,408	1,198	6.1%	
1984	217,057	171,152	1,268	6.8%		223,103	175,169	1,274	6.3%	
1985	247,447	185,025	1,337	5.4%		261,884	190,358	1,376	8.0%	
1986	273,740	184,238	1,486	11.1%	10%	286,493	186,825	1,533	11.4%	10%
1987	295,720	173,606	1,703	14.6%	15%	311,405	174,931	1,780	16.1%	15%
1988	350,237	183,227	1,911	12.2%	20%	366,387	183,975	1,992	11.9%	20%
1989	403,452	185,479	2,175	13.8%	25%	421,339	185,007	2,277	14.3%	25%
1990	433,037	182,003	2,379	9.4%	30%	450,443	183,164	2,459	8.0%	30%
5 Year Weighted Change:				12.0%					11.9%	
Latest 12 Year Fitted Change:				9.9%					10.2%	
Latest 5 Year Fitted Change:				12.6%					12.7%	
Selected Change:									11.9%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Collision (\$100 Deductible)

Appendix 3
Exhibit 2
Page 11 of 17

Ultimate Basis										
Accident Year Ended 6/30	Incurred Losses at 12 Months (\$'000)	Incurred Number of Claims at 12 Months	Claim Severity at 12 Months	Percent Change In Claim Severity	Assigned Weight	Ultimate Losses (\$'000)	Ultimate Number of Claims	Ultimate Claim Severity	Percent Change In Claim Severity	Assigned Weight
1981	\$151,911	162,770	\$933	---	---	\$134,208	156,799	\$856	---	---
1982	160,020	159,825	1,001	7.3%	7.3%	144,680	160,577	901	5.3%	5.3%
1983	136,323	128,731	1,059	5.8%	5.8%	123,834	126,406	980	8.8%	8.8%
1984	147,727	130,822	1,129	6.6%	6.6%	132,437	128,157	1,033	5.4%	5.4%
1985	164,884	138,017	1,195	5.8%	5.8%	146,908	133,827	1,098	6.3%	6.3%
1986	170,202	130,592	1,303	9.0%	10%	150,497	125,428	1,200	9.3%	10%
1987	156,206	108,304	1,442	10.7%	15%	135,307	101,447	1,334	11.2%	15%
1988	160,256	98,556	1,626	12.8%	20%	138,542	90,259	1,535	15.1%	20%
1989	160,048	84,544	1,893	16.4%	25%	136,634	77,568	1,761	14.7%	25%
1990	146,091	72,954	2,003	5.8%	30%	126,077	67,555	1,866	6.0%	30%
5 Year Weighted Change: 11.1%										
10 Year Fitted Change: 9.4%										
5 Year Fitted Change: 12.3%										
Selected Change: 11.1%										

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Collision (\$200 and Higher Deductibles)

Appendix 3
Exhibit 2
Page 12 of 17

Ultimate Basis										
Accident Year Ended 6/30 (1)	Incurred Losses at 12 Months (\$200) (2)	12 Month Basis				Ultimate Basis				
		Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$200) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1981	\$95,683	71,756	\$1,333	—		\$84,752	68,213	\$1,242	—	
1982	101,807	75,073	1,356	1.7%		92,270	73,565	1,254	1.0%	
1983	97,498	68,017	1,433	5.7%		89,694	66,028	1,358	8.3%	
1984	122,937	80,793	1,522	6.2%		110,630	77,947	1,419	4.5%	
1985	164,597	104,222	1,579	3.7%		146,446	100,222	1,461	3.0%	10%
1986	200,459	120,246	1,667	5.6%	10%	176,438	114,619	1,539	5.3%	15%
1987	243,770	132,882	1,834	10.0%	15%	210,045	122,094	1,720	11.8%	20%
1988	337,047	163,607	2,060	12.3%	20%	288,316	147,255	1,958	13.8%	25%
1989	440,112	185,437	2,373	15.2%	25%	373,998	167,765	2,229	13.8%	30%
1990	489,846	197,140	2,485	4.7%	30%	418,328	179,003	2,337	4.8%	
5 Year Weighted Change: 10.0%										
10 Year Fitted Change: 7.7%										
5 Year Fitted Change: 11.6%										
Selected Change: 10.0%										

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Collision (All Deductibles Combined)

Appendix 3
Exhibit 2
Page 13 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1978	\$155,237	186,430	\$833	---		\$135,599	177,890	\$762	---	
1979	200,488	212,975	941	13.0%		170,562	202,458	882	15.7%	
1980	230,700	222,766	1,036	10.1%		206,875	215,320	961	9.0%	
1981	251,308	239,686	1,048	1.2%		222,244	229,962	966	0.5%	
1982	265,754	240,066	1,107	5.6%		240,504	239,293	1,005	4.0%	
1983	237,328	201,076	1,180	6.6%		216,731	196,668	1,102	9.7%	
1984	275,969	217,781	1,267	7.4%		247,916	211,935	1,170	6.2%	
1985	334,259	247,643	1,350	6.6%		298,098	239,294	1,246	6.5%	
1986	375,480	257,816	1,456	7.9%	10%	331,353	245,349	1,351	8.4%	10%
1987	405,069	246,948	1,640	12.6%	15%	349,339	228,550	1,529	13.2%	15%
1988	501,241	267,255	1,876	14.4%	20%	430,104	242,118	1,776	16.2%	20%
1989	614,573	277,250	2,217	18.2%	25%	516,401	248,154	2,081	17.2%	25%
1990	648,878	275,055	2,359	6.4%	30%	548,841	247,382	2,219	6.6%	30%
5 Year Weighted Change:										
Latest 12 Year Fitted Change:										
Latest 5 Year Fitted Change:										

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Comprehensive (\$25 Deductible)

Appendix 3
Exhibit 2
Page 14 of 17

12 Month Basis					Ultimate Basis					
Accident Year Ended 6/30 (1)	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1981	\$94,913	239,407	\$396	---	---	\$102,918	269,880	\$381	---	---
1982	107,539	263,134	409	3.3%	3.3%	116,694	295,629	395	3.7%	3.7%
1983	90,732	218,305	416	1.7%	1.7%	95,874	238,513	402	1.8%	1.8%
1984	81,232	179,333	453	8.9%	8.9%	86,899	201,390	431	7.2%	7.2%
1985	75,901	170,491	445	-1.8%	---	82,497	190,274	434	0.7%	---
1986	58,089	138,634	419	-5.8%	10%	60,850	152,135	400	-7.8%	10%
1987	44,635	100,961	442	5.5%	15%	46,557	110,153	423	5.8%	15%
1988	33,780	72,151	468	5.9%	20%	35,539	80,053	444	5.0%	20%
1989	30,273	62,873	481	2.8%	25%	31,393	69,386	452	1.8%	25%
1990	28,634	55,674	514	6.9%	30%	29,894	61,241	488	8.0%	30%
5 Year Weighted Change:					4.2%	3.9%				
10 Year Fitted Change:					2.4%	2.2%				
5 Year Fitted Change:					5.1%	4.7%				
Selected Change:					---	3.9%				

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Comprehensive (\$50 Deductible)

Appendix 3
Exhibit 2
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12 Month Basis					Ultimate Basis					
Accident Year Ended 6/30 (1)	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1981	\$4,968	9,850	\$504	---	---	\$5,451	11,028	\$494	---	---
1982	9,089	16,646	546	8.3%	10%	10,399	20,184	515	4.3%	10%
1983	23,978	53,592	447	-18.1%	15%	26,450	61,130	433	-15.9%	15%
1984	49,751	109,241	455	1.8%	20%	52,658	119,921	439	1.4%	20%
1985	70,004	143,867	487	7.0%	25%	76,889	163,049	472	7.5%	25%
1986	82,418	173,315	476	-2.3%	30%	87,483	192,082	455	-3.6%	30%
1987	104,998	205,026	512	7.6%	10%	111,041	226,314	491	7.9%	15%
1988	136,141	253,056	538	5.1%	20%	146,232	280,638	521	6.1%	20%
1989	160,796	289,096	556	3.3%	25%	167,338	316,580	529	1.5%	25%
1990	191,001	316,617	603	8.5%	30%	201,697	348,912	578	9.3%	30%
5 Year Weighted Change:					5.3%				5.2%	
10 Year Fitted Change:					1.8%				1.7%	
5 Year Fitted Change:					5.7%				5.7%	
Selected Change:									5.2%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Claim Severity Trend Calculation
Comprehensive (All Deductibles Combined)

Appendix 3
Exhibit 2
Page 16 of 17

Accident Year Ended 6/30 (1)	12 Month Basis					Ultimate Basis				
	Incurred Losses at 12 Months (\$000) (2)	Incurred Number of Claims at 12 Months (3)	Claim Severity at 12 Months (4)	Percent Change In Claim Severity (5)	Assigned Weight (6)	Ultimate Losses (\$000) (7)	Ultimate Number of Claims (8)	Ultimate Claim Severity (9)	Percent Change In Claim Severity (10)	Assigned Weight (11)
1978	\$49,619	175,103	\$283	---		\$51,569	193,045	\$267	---	
1979	71,878	216,386	332	17.3%		75,222	236,909	318	19.1%	
1980	96,091	245,019	392	18.1%		101,662	270,941	375	17.9%	
1981	105,474	259,227	407	3.8%		114,329	292,425	391	4.3%	
1982	123,159	290,971	423	3.9%		134,083	328,761	408	4.3%	
1983	121,134	282,773	428	1.2%		129,052	311,928	414	1.5%	
1984	136,708	298,219	458	7.0%		145,439	331,569	439	6.0%	
1985	154,069	326,942	471	2.8%		168,083	367,693	457	4.1%	
1986	149,114	327,347	456	-3.2%	10%	157,312	360,479	436	-4.6%	10%
1987	161,523	322,948	500	9.6%	15%	169,573	354,679	478	9.6%	15%
1988	185,107	344,352	538	7.6%	20%	197,359	381,554	517	8.2%	20%
1989	213,637	377,598	566	5.2%	25%	222,309	412,994	538	4.1%	25%
1990	253,354	406,770	623	10.1%	30%	263,002	446,426	589	9.5%	30%
5 Year Weighted Change:				7.0%					6.5%	
Latest 12 Year Fitted Change:				4.9%					4.8%	
Latest 5 Year Fitted Change:				7.8%					7.5%	

See page 17, Notes on Severity Trend Calculation Exhibits.

William M. Mercer Limited

Column

- (1) For bodily injury liability (page 1), property damage (page 10), collision (page 13), and comprehensive (page 16), the first three years shown, 1978-1980, are the accident years ended December 31.
- (2) From Exhibit 3, Column 3 (on the corresponding page for each coverage).
- (3) From Exhibit 1, Column 3 (on the corresponding page for each coverage).
- (4) Is equal to Column (2) divided by Column (3) times 1,000.
- (5) Is equal to Column (4) at the corresponding accident year minus Column (4) at the preceding accident year, all divided by Column (4) at the preceding accident year.
- (7) From Exhibit 3, Column 9 (on the corresponding page for each coverage).
- (8) From Exhibit 1, Column 9 (on the corresponding page for each coverage).
- (9) Is equal to Column (7) divided by Column (8) times 1,000.
- (10) Is equal to Column (9) at the corresponding accident year minus Column (9) at the preceding accident year, all divided by Column (9) at the preceding accident year.

Technical Appendix
Loss Cost Trend Calculation
Bodily Injury Liability

Appendix 3
Exhibit 3
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Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis			Ultimate Basis						
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	3,190,759	\$162,569	\$50.95	---		\$228,375	1.000	\$228,375	\$71.57	---	
1979	3,346,970	160,871	48.06	-5.7%		296,934	1.000	296,934	88.72	24.0%	
1980	3,447,950	180,823	52.44	9.1%		372,762	1.000	372,762	108.11	21.9%	
1981	3,473,173	180,274	51.90	-1.0%		397,456	1.000	397,456	114.44	5.9%	
1982	3,500,941	186,197	53.18	2.5%		450,529	1.000	450,529	128.69	12.5%	
1983	3,550,812	216,113	60.86	14.4%		509,387	1.000	509,387	143.46	11.5%	
1984	3,694,094	302,471	81.88	34.5%		621,929	1.003	623,795	168.86	17.7%	
1985	3,821,327	377,063	98.67	20.5%		761,815	1.021	777,813	203.55	20.5%	10%
1986	3,973,939	431,253	108.52	10.0%	10%	854,511	1.036	885,273	222.77	9.4%	10%
1987	4,097,975	522,830	127.58	17.6%	15%	975,515	1.066	1,039,899	253.76	13.9%	15%
1988	4,269,674	642,554	150.49	18.0%	20%	1,103,425	1.138	1,255,698	294.10	15.9%	20%
1989	4,476,849	757,268	169.15	12.4%	25%	1,109,399	1.291	1,432,234	319.92	8.8%	25%
1990	4,626,219	813,096	175.76	3.9%	30%	985,955	1.567	1,544,991	333.96	4.4%	30%
5 Year Weighted Change:				11.5%						9.7%	
Latest 12 Year Fitted Change:				15.1%						13.9%	
Latest 5 Year Fitted Change:				13.3%						11.0%	
Selected Change:										9.8%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Income Benefits

Appendix 3
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12 Month Basis				Ultimate Basis							
Accident Year	Exposure	Incurred Losses at 12 Months (\$000)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000)	Selected Develop. Factor (8)	Ultimate Losses (\$000)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
Ended 6/30 (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1984	3,656,935	\$29,764	\$8.14	---	---	\$42,469	1.000	\$42,469	\$11.61	---	---
1985	3,872,518	36,573	9.44	16.0%	10%	54,812	0.991	54,319	14.03	20.8%	10%
1986	3,928,916	38,253	9.74	3.2%	15%	58,111	0.980	56,949	14.49	3.3%	15%
1987	4,061,519	48,178	11.86	21.8%	20%	64,917	0.991	64,333	15.84	9.3%	20%
1988	4,259,750	59,766	14.03	18.3%	25%	75,507	1.027	77,546	18.20	14.9%	25%
1989	4,458,843	68,606	15.39	9.7%	30%	79,757	1.077	85,898	19.26	5.8%	30%
1990	4,580,194	69,963	15.28	-0.7%		82,269	1.193	98,147	21.43	11.3%	
5 Year Weighted Change:				9.5%						9.5%	
Latest 7 Year Fitted Change:				12.2%						10.1%	
Latest 5 Year Fitted Change:				12.3%						10.3%	
Selected Change:										9.7%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Medical Benefits

Appendix 3
Exhibit 3
Page 3 of 18

		12 Month Basis					Ultimate Basis					
Accident Year	Exposure	Incurred Losses at 12 Months (\$000)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000)	Selected Develop. Factor (8)	Ultimate Losses (\$000)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)	
Ended 6/30 (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1984	3,656,935	\$17,328	\$4.74	---		\$17,675	0.995	\$17,587	\$4.81	---		
1985	3,872,518	18,201	4.70	-0.8%		23,341	0.980	22,874	5.91	22.9%		
1986	3,928,916	22,090	5.62	19.6%	10%	27,865	0.964	26,862	6.84	15.7%	10%	
1987	4,061,519	28,823	7.10	26.3%	15%	36,728	0.946	34,745	8.55	25.0%	15%	
1988	4,259,750	36,454	8.56	20.6%	20%	45,789	0.965	44,186	10.37	21.3%	20%	
1989	4,458,843	43,076	9.66	12.9%	25%	52,763	1.057	55,770	12.51	20.6%	25%	
1990	4,580,194	49,123	10.73	11.1%	30%	59,644	1.207	71,990	15.72	25.7%	30%	
5 Year Weighted Change:										22.4%		
Latest 7 Year Fitted Change:										21.6%		
Latest 5 Year Fitted Change:										22.7%		
Selected Change:										22.7%		

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

Technical Appendix
Loss Cost Trend Calculation
Death Benefits

Appendix 3
Exhibit 3
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12 Month Basis						Ultimate Basis					
Accident Year	Exposure	Incurred Losses at 12 Months (\$000)	Loss Cost at 12 Months (4)	Loss Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
Ended 6/30 (1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1984	3,656,935	\$4,091	\$1.12	---		\$4,187	0.999	\$4,183	\$1.14	---	
1985	3,872,518	3,982	1.03	-8.0%		3,629	0.996	3,614	0.93	-18.4%	
1986	3,928,916	3,878	0.99	-3.9%	10%	3,477	0.986	3,428	0.87	-6.5%	10%
1987	4,061,519	4,170	1.03	4.0%	15%	3,945	0.977	3,854	0.95	9.2%	15%
1988	4,259,750	4,283	1.01	-1.9%	20%	4,052	0.967	3,918	0.92	-3.2%	20%
1989	4,458,843	5,149	1.15	13.9%	25%	4,955	0.941	4,663	1.05	14.1%	25%
1990	4,580,194	5,311	1.16	0.9%	30%	5,902	0.893	5,270	1.15	9.5%	30%
5 Year Weighted Change:										6.5%	
Latest 7 Year Fitted Change:										1.2%	
Latest 5 Year Fitted Change:										6.8%	
Selected Change:										0.9%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Funeral Benefits

Appendix 3
Exhibit 3
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Accident Year	Exposure (2)	12 Month Basis					Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)	
1984	3,656,935	\$350	\$0.10	---		\$354	1.000	\$354	\$0.10	---		
1985	3,872,518	478	0.12	20.0%		473	0.996	471	0.12	20.0%		
1986	3,928,916	534	0.14	16.7%	10%	529	0.992	525	0.13	8.3%	10%	
1987	4,061,519	619	0.15	7.1%	15%	611	0.983	601	0.15	15.4%	15%	
1988	4,259,750	703	0.17	13.3%	20%	697	0.966	673	0.16	6.7%	20%	
1989	4,458,843	842	0.19	11.8%	25%	899	0.925	832	0.19	18.8%	25%	
1990	4,580,194	861	0.19	0.0%	30%	987	0.911	899	0.20	5.3%	30%	
5 Year Weighted Change:				8.3%						10.8%		
Latest 7 Year Fitted Change:				11.5%						12.1%		
Latest 5 Year Fitted Change:				8.8%						11.6%		
Selected Change:										0.9%		

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Quebec Benefits

Appendix 3
Exhibit 3
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			12 Month Basis				Ultimate Basis					
Accident Year	Ended 6/30	Exposure	Incurring Losses at 12 Months (\$000)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurring Losses At 12/90 (\$000)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	1984	3,656,935	\$472	\$0.13	---		\$777	1.004	\$780	\$0.21	---	
	1985	3,872,518	610	0.16	23.1%		1,211	1.007	1,219	0.31	47.6%	10%
	1986	3,928,916	643	0.16	0.0%	10%	933	0.982	916	0.23	-25.8%	15%
	1987	4,061,519	963	0.24	50.0%	15%	868	1.031	895	0.22	-4.3%	20%
	1988	4,259,750	881	0.21	-12.5%	20%	937	1.010	946	0.22	0.0%	25%
	1989	4,458,843	549	0.12	-42.9%	25%	798	0.929	741	0.17	-22.7%	30%
	1990	4,580,194	1,218	0.27	125.0%	30%	1,985	0.959	1,904	0.42	147.1%	
5 Year Weighted Change:					31.8%						35.2%	
Latest 7 Year Fitted Change:					7.0%						3.0%	
Latest 5 Year Fitted Change:					3.6%						9.9%	
Selected Change:											5.0%	

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See page 17, Notes on Loss Cost Trend Calculation Exhibits.

Technical Appendix
Loss Cost Trend Calculation
Accident Benefits Total

Appendix 3
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Accident Year Ended 6/30	Exposure (2)	12 Month Basis				Ultimate Basis						
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 6/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)	
1981	3,464,170	\$49,407	\$14.26	---		\$71,500	1.000	\$71,500	\$20.64	---		
1982	3,484,362	50,250	14.42	1.1%		77,327	0.997	77,095	22.13	7.2%		
1983	3,525,065	49,405	14.02	-2.8%		75,341	0.989	74,512	21.14	-4.5%		
1984	3,656,935	61,688	16.87	20.3%		88,831	0.984	87,410	23.90	13.1%		
1985	3,820,877	72,359	18.94	12.3%		118,072	0.976	115,238	30.16	26.2%		
1986	3,924,159	79,662	20.30	7.2%	10%	129,778	0.984	127,702	32.54	7.9%	10%	
1987	4,059,850	98,506	24.26	19.5%	15%	148,373	1.017	150,895	37.17	14.2%	15%	
1988	4,264,831	128,175	30.05	23.9%	20%	187,719	1.080	202,737	47.54	27.9%	20%	
1989	4,445,135	144,564	32.52	8.2%	25%	186,829	1.229	229,613	51.65	8.6%	25%	
1990	4,537,788	154,763	34.11	4.9%	30%	154,763	1.548	239,573	52.80	2.2%	30%	
5 Year Weighted Change:												11.3%
Latest 10 Year Fitted Change:												13.8%
Latest 5 Year Fitted Change:												15.9%

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Uninsured Motorist

Appendix 3
Exhibit 3
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12 Month Basis						Ultimate Basis					
Accident Year	Exposure	Incurred Losses at 12 Months (\$000)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
Ended 6/30 (1)	(2)	(3)									
1984	3,656,935	\$9,021	\$2.47	---		\$21,842	1.000	\$21,842	\$5.97	---	
1985	3,872,518	10,916	2.82	14.2%		33,132	0.992	32,867	8.49	42.2%	
1986	3,928,916	14,354	3.65	29.4%	10%	38,521	1.004	38,675	9.84	15.9%	10%
1987	4,061,519	16,125	3.97	8.8%	15%	42,677	1.016	43,360	10.68	8.5%	15%
1988	4,259,750	26,370	6.19	55.9%	20%	68,975	1.155	79,666	18.70	75.1%	20%
1989	4,458,843	27,124	6.08	-1.8%	25%	62,947	1.442	90,770	20.36	8.9%	25%
1990	4,580,194	29,176	6.37	4.8%	30%	47,193	2.115	99,813	21.79	7.0%	30%
5 Year Weighted Change:										22.2%	
Latest 7 Year Fitted Change:										25.1%	
Latest 5 Year Fitted Change:										25.0%	
Selected Change:										21.0%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Underinsured Motorist

Appendix 3
Exhibit 3
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12 Month Basis					Ultimate Basis						
Accident Year	Exposure (2)	Incurring Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurring Losses At 12/90 (\$000) (7)	Selected Develop- Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1984	3,108,395	\$2,367	\$0.76	---		\$13,858	1.010	\$13,997	\$4.50	---	
1985	3,247,745	2,688	0.83	9.2%		15,129	1.034	15,643	4.82	7.1%	
1986	3,335,535	3,851	1.15	38.6%	10%	12,632	1.076	13,592	4.07	-15.6%	10%
1987	3,456,622	4,195	1.21	5.2%	15%	10,655	1.154	12,296	3.56	-12.5%	15%
1988	3,669,178	5,257	1.43	18.2%	20%	12,634	1.286	16,247	4.43	24.4%	20%
1989	3,866,432	6,107	1.58	10.5%	25%	15,183	1.559	23,670	6.12	38.1%	25%
1990	4,065,352	4,515	1.11	-29.7%	30%	7,282	2.269	16,523	4.06	-33.7%	30%
5 Year Weighted Change:										0.9%	
Latest 7 Year Fitted Change:										0.9%	
Latest 5 Year Fitted Change:										5.5%	
Selected Change:										-0.2%	

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See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Property Damage

Appendix 3
Exhibit 3
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Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	3,190,759	\$147,288	\$46.16	---		\$147,782	1.000	\$147,782	\$46.32	---	
1979	3,346,970	173,013	51.69	12.0%		178,560	1.000	178,560	53.35	15.2%	
1980	3,447,950	185,530	53.81	4.1%		197,193	1.000	197,193	57.19	7.2%	
1981	3,473,173	203,552	58.61	8.9%		212,502	1.000	212,502	61.18	7.0%	
1982	3,500,941	207,585	59.29	1.2%		217,537	1.000	217,537	62.14	1.6%	
1983	3,550,812	185,594	52.27	-11.8%		192,103	1.000	192,103	54.10	-12.9%	
1984	3,694,094	217,057	58.76	12.4%		223,103	1.000	223,103	60.39	11.6%	
1985	3,821,327	247,447	64.75	10.2%		261,884	1.000	261,884	68.53	13.5%	
1986	3,973,939	273,740	68.88	6.4%	10%	286,780	0.999	286,493	72.09	5.2%	10%
1987	4,097,975	295,720	72.16	4.8%	15%	312,342	0.997	311,405	75.99	5.4%	15%
1988	4,269,674	350,237	82.03	13.7%	20%	368,228	0.995	366,387	85.81	12.9%	20%
1989	4,476,849	403,452	90.12	9.9%	25%	425,165	0.991	421,339	94.12	9.7%	25%
1990	4,626,219	433,037	93.60	3.9%	30%	455,914	0.988	450,443	97.37	3.5%	30%

5 Year Weighted Change:

Latest 12 Year Fitted Change:

Latest 5 Year Fitted Change:

Selected Change:

7.7%

5.8%

8.7%

7.4%

5.8%

8.5%

7.4%

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Collision (\$100 Deductible)

Appendix 3
Exhibit 3
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Accident Year Ended 6/30	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 6/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1981	1,691,532	\$151,911	\$89.81	---		\$134,208	1.000	\$134,208	\$79.34	---	
1982	1,696,473	160,020	94.33	5.0%		144,680	1.000	144,680	85.28	7.5%	
1983	1,614,389	136,323	84.44	-10.5%		123,834	1.000	123,834	76.71	-10.0%	
1984	1,593,047	147,727	92.73	9.8%		132,437	1.000	132,437	83.13	8.4%	
1985	1,591,422	164,884	103.61	11.7%		147,055	0.999	146,908	92.31	11.0%	
1986	1,562,988	170,202	108.90	5.1%	10%	150,799	0.998	150,497	96.29	4.3%	10%
1987	1,450,911	156,206	107.66	-1.1%	15%	135,850	0.996	135,307	93.26	-3.1%	15%
1988	1,329,563	160,256	120.53	12.0%	20%	139,519	0.993	138,542	104.20	11.7%	20%
1989	1,203,600	160,048	132.97	10.3%	25%	139,851	0.977	136,634	113.52	8.9%	25%
1990	1,066,834	146,091	136.94	3.0%	30%	146,091	0.863	126,077	118.18	4.1%	30%

5 Year Weighted Change:

6.2%

10 Year Fitted Change:

5.3%

5 Year Fitted Change:

6.9%

Selected Change:

5.8%

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Collision (\$200 and Higher Deductibles)

Appendix 3
Exhibit 3
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Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 6/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1981	864,471	\$95,683	\$110.68	---		\$84,752	1.000	\$84,752	\$98.04	---	
1982	920,981	101,807	110.54	-0.1%		92,270	1.000	92,270	100.19	2.2%	
1983	1,026,648	97,498	94.97	-14.1%		89,694	1.000	89,694	87.37	-12.8%	
1984	1,180,590	122,937	104.13	9.6%		110,741	0.999	110,630	93.71	7.3%	
1985	1,339,947	164,597	122.84	18.0%		146,593	0.999	146,446	109.29	16.6%	
1986	1,506,372	200,459	133.07	8.3%	10%	176,969	0.997	176,438	117.13	7.2%	10%
1987	1,744,348	243,770	139.75	5.0%	15%	211,100	0.995	210,045	120.41	2.8%	15%
1988	2,059,811	337,047	163.63	17.1%	20%	291,523	0.989	288,316	139.97	16.2%	20%
1989	2,377,527	440,112	185.11	13.1%	25%	385,168	0.971	373,998	157.31	12.4%	25%
1990	2,576,960	489,846	190.09	2.7%	30%	489,846	0.854	418,328	162.33	3.2%	30%
5 Year Weighted Change:				9.1%						8.4%	
10 Year Fitted Change:				7.6%						6.8%	
5 Year Fitted Change:				10.5%						9.6%	
Selected Change:										8.5%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Collision (All Deductibles Combined)

Appendix 3
Exhibit 3
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Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	2,201,427	\$155,237	\$70.52	---		\$135,599	1.000	\$135,599	\$61.60	---	
1979	2,378,086	200,488	84.31	19.6%		178,562	1.000	178,562	75.09	21.9%	
1980	2,512,082	230,700	91.84	8.9%		206,875	1.000	206,875	82.35	9.7%	
1981	2,556,003	251,308	98.32	7.1%		222,244	1.000	222,244	86.95	5.6%	
1982	2,617,454	265,754	101.53	3.3%		240,504	1.000	240,504	91.88	5.7%	
1983	2,641,037	237,328	89.86	-11.5%		216,731	1.000	216,731	82.06	-10.7%	
1984	2,773,637	275,969	99.50	10.7%		247,916	1.000	247,916	89.38	8.9%	
1985	2,931,369	334,259	114.03	14.6%		298,098	1.000	298,098	101.69	13.8%	
1986	3,107,728	375,480	120.82	6.0%	10%	331,353	1.000	331,353	106.62	4.8%	10%
1987	3,229,164	405,069	125.44	3.8%	15%	350,039	0.998	349,339	108.18	1.5%	15%
1988	3,411,251	501,241	146.94	17.1%	20%	432,700	0.994	430,104	126.08	16.5%	20%
1989	3,619,645	614,573	169.79	15.6%	25%	524,265	0.985	516,401	142.67	13.2%	25%
1990	3,700,562	648,878	175.35	3.3%	30%	584,495	0.939	548,841	148.31	4.0%	30%

5 Year Weighted Change:
Latest 12 Year Fitted Change:
Latest 5 Year Fitted Change:

9.5%
7.0%
11.0%

Selected Change:

8.5%
6.3%
9.8%
7.8%

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Comprehensive (\$25 Deductible)

Appendix 3
Exhibit 3
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Accident Year Ended 6/30	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 6/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1981	2,717,421	\$94,913	\$34.93	---		\$102,918	1.000	\$102,918	\$37.87	---	
1982	2,918,019	107,539	36.85	5.5%		116,694	1.000	116,694	39.99	5.6%	
1983	2,829,847	90,732	32.06	-13.0%		95,874	1.000	95,874	33.88	-15.3%	
1984	2,542,829	81,232	31.95	-0.3%		86,899	1.000	86,899	34.17	0.9%	
1985	2,253,531	75,901	33.68	5.4%		82,497	1.000	82,497	36.61	7.1%	
1986	1,688,458	58,089	34.40	2.1%	10%	60,850	1.000	60,850	36.04	-1.6%	10%
1987	1,300,009	44,635	34.33	-0.2%	15%	46,557	1.000	46,557	35.81	-0.6%	15%
1988	972,297	33,780	34.74	1.2%	20%	35,575	0.999	35,539	36.55	2.1%	20%
1989	824,484	30,273	36.72	5.7%	25%	31,519	0.996	31,393	38.08	4.2%	25%
1990	693,075	28,634	41.31	12.5%	30%	28,634	1.044	29,894	43.13	13.3%	30%
5 Year Weighted Change:				5.6%						5.2%	
10 Year Fitted Change:				1.3%						0.8%	
5 Year Fitted Change:				4.4%						4.3%	
Selected Change:										5.3%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Comprehensive (\$50 Deductible)

Appendix 3
Exhibit 3
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Accident Year	Exposure (1)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 6/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1981	122,965	\$4,968	\$40.40	---		\$5,451	1.000	\$5,451	\$44.33	---	
1982	201,541	9,089	45.10	11.6%		10,399	1.000	10,399	51.60	16.4%	
1983	434,611	23,978	55.17	22.3%		26,450	1.000	26,450	60.86	17.9%	
1984	868,715	49,751	57.27	3.8%		52,658	1.000	52,658	60.62	-0.4%	
1985	1,311,488	70,004	53.38	-6.8%		76,889	1.000	76,889	58.63	-3.3%	
1986	1,991,119	82,418	41.39	-22.5%	10%	87,483	1.000	87,483	43.94	-25.1%	10%
1987	2,473,897	104,998	42.44	2.5%	15%	111,041	1.000	111,041	44.89	2.2%	15%
1988	2,955,904	136,141	46.06	8.5%	20%	146,232	1.000	146,232	49.47	10.2%	20%
1989	3,211,930	160,796	50.06	8.7%	25%	167,673	0.998	167,338	52.10	5.3%	25%
1990	3,290,769	191,001	58.04	15.9%	30%	191,001	1.056	201,697	61.29	17.6%	30%
5 Year Weighted Change:				6.8%						6.5%	
10 Year Fitted Change:				1.2%						0.5%	
5 Year Fitted Change:				8.8%						8.5%	
Selected Change:										6.1%	

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Technical Appendix
Loss Cost Trend Calculation
Comprehensive (All Deductibles Combined)

Appendix 3
Exhibit 3
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Accident Year Ended 6/30 (1)	Exposure (2)	12 Month Basis				Ultimate Basis					
		Incurred Losses at 12 Months (\$000) (3)	Loss Cost at 12 Months (4)	Percent Change in Loss Cost (5)	Assigned Weight (6)	Incurred Losses At 12/90 (\$000) (7)	Selected Develop. Factor (8)	Ultimate Losses (\$000) (9)	Ultimate Loss Cost (10)	Percent Change in Loss Cost (11)	Assigned Weight (12)
1978	2,443,789	\$49,619	\$20.30	---		\$51,569	1.000	\$51,569	\$21.10	---	
1979	2,626,254	71,878	27.37	34.8%		75,222	1.000	75,222	28.64	35.7%	
1980	2,778,342	96,091	34.59	26.4%		101,662	1.000	101,662	36.59	27.8%	
1981	2,840,386	105,474	37.13	7.3%		114,329	1.000	114,329	40.25	10.0%	
1982	3,119,560	123,159	39.48	6.3%		134,083	1.000	134,083	42.98	6.8%	
1983	3,264,458	121,134	37.11	-6.0%		129,052	1.000	129,052	39.53	-8.0%	
1984	3,411,544	136,708	40.07	8.0%		145,439	1.000	145,439	42.63	7.8%	
1985	3,585,019	154,069	42.98	7.3%		168,083	1.000	168,083	46.88	10.0%	
1986	3,828,656	149,114	38.95	-9.4%	10%	157,312	1.000	157,312	41.09	-12.4%	10%
1987	3,932,284	161,523	41.08	5.5%	15%	169,573	1.000	169,573	43.12	4.9%	15%
1988	4,129,665	185,107	44.82	9.1%	20%	197,359	1.000	197,359	47.79	10.8%	20%
1989	4,312,253	213,637	49.54	10.5%	25%	222,309	1.000	222,309	51.55	7.9%	25%
1990	4,415,239	253,354	57.38	15.8%	30%	264,590	0.994	263,002	59.57	15.6%	30%
5 Year Weighted Change:											8.3%
Latest 12 Year Fitted Change:											4.6%
Latest 5 Year Fitted Change:											9.7%

See page 17, Notes on Loss Cost Trend Calculation Exhibits.

William M. Mercer Limited

Column

- (1) For bodily injury liability (page 1), property damage (page 10), collision (page 13), and comprehensive (page 16), the first three years shown, 1978-1980, are the accident years ended December 31.
- (2) The exposures for accident years ended June 30, 1987 through June 30, 1990 are determined from the IBC Bulletin No. S.D. 91-10; the only exceptions are for the accident benefits total (page 7), collision \$100 deductible (page 11), collision \$200 and higher deductibles (page 12), comprehensive \$25 deductible (page 14), comprehensive \$50 deductible (page 15) where the exposures for the corresponding accident years are determined from earlier IBC data sources. Exposures for prior accident years for all coverages are determined from earlier IBC data sources.
- (3) The losses for the accident years ended June 30, 1984 through June 30, 1990 are determined from the IBC Bulletin No. S.D. 91-17; the only exceptions are for those coverages identified in note (2). Losses for prior accident years for all coverages are determined from earlier IBC data sources.
- (4) Is equal to Column (3) divided by Column (2) times 1,000.
- (5) Is equal to Column (4) at the corresponding accident year minus Column (4) at the preceding accident year, all divided by Column (4) at the preceding accident year.

- (7) The losses for the accident years ended June 30, 1984 through June 30, 1990 are from Appendix 1, Exhibit 3, Column 6 (on the corresponding page for each coverage) which are determined from the IBC Bulletin No. S.D. 91-17; the only exceptions are for those coverages identified in note (2). Losses for prior accident years for all coverages are determined from earlier IBC data sources.
- (8) From Appendix 1, Exhibit 3, Column 8 (on the corresponding page for each coverage), subject to small rounding differences.
- (9) Is equal to Column (7) times Column (8).
- (10) Is equal to Column (9) divided by Column (2) times 1,000.
- (11) Is equal to Column (10) at the corresponding accident year minus Column (10) at the preceding accident year, all divided by Column (10) at the preceding accident year.

Technical Appendix
Calculation of Filing Trend
Bodily Injury Liability

Appendix 3
Exhibit 4
Page 1 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.8%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	2.4%	1.065
Technical End of Recession	05/15/91		1.090
Hit Bottom	11/13/91	12.7%	1.102
Midpoint of Filing	07/01/93		1.340
End of Recovery	11/12/95		1.780
Filing trend:			8.0%

Technical Appendix
Calculation of Filing Trend
Income Benefits

Appendix 3
Exhibit 4
Page 2 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Technical End of Recession	05/15/91		0.938
Hit Bottom	11/13/91	17.1%	0.880
Midpoint of Filing	07/01/93		1.140
End of Recovery	11/11/96		1.942
Filing trend:			3.5%

Technical Appendix
Calculation of Filing Trend
Medical Benefits

Appendix 3
Exhibit 4
Page 3 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	22.7%	1.000
2nd Year	12/31/89		1.063
Technical Start of Recession	05/15/90	-1.4%	1.147
Technical End of Recession	05/15/91		1.130
Hit Bottom	11/13/91	31.0%	1.122
Midpoint of Filing	07/01/93		1.744
End of Recovery	11/11/96		4.335
	Filing trend:		15.8%

Technical Appendix
Calculation of Filing Trend
Medical Benefits Frequency

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	3.0%	1.000
2nd Year	12/31/89		1.009
Technical Start of Recession	05/15/90	-17.3%	1.020
Technical End of Recession	05/15/91		0.844
Hit Bottom	11/13/91	10.0%	0.768
Midpoint of Filing	07/01/93		0.897
End of Recovery	11/11/96		1.236
	Filing trend:		-2.8%

Technical Appendix
Calculation of Filing Trend
Death Benefits

Appendix 3
Exhibit 4
Page 5 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Midpoint of Filing	07/01/93		0.829
End of Recovery	11/11/96		1.066
Filing trend:			-4.8%

Technical Appendix
Calculation of Filing Trend
Funeral Benefits

Appendix 3
Exhibit 4
Page 6 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Midpoint of Filing	07/01/93		0.829
End of Recovery	11/11/96		1.066
Filing trend:			-4.8%

Technical Appendix
Calculation of Filing Trend
Quebec Benefits

Appendix 3
Exhibit 4
Page 7 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.0%	1.000
2nd Year	12/31/89		1.015
Technical Start of Recession	05/15/90	-15.7%	1.033
Technical End of Recession	05/15/91		0.872
Hit Bottom	11/13/91	12.1%	0.800
Midpoint of Filing	07/01/93		0.965
End of Recovery	11/11/96		1.419
Filing trend:			-0.9%

Technical Appendix
Calculation of Filing Trend
Uninsured Motorist

Appendix 3
Exhibit 4
Page 8 of 14

Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	21.0%	1.000
2nd Year	12/31/89		1.059
Technical Start of Recession	05/15/90	-2.8%	1.136
Technical End of Recession	05/15/91		1.104
Hit Bottom	11/13/91	29.2%	1.089
Midpoint of Filing	07/01/93		1.653
End of Recovery	11/11/96		3.920
	Filing trend:		14.1%

Technical Appendix
Calculation of Filing Trend
Underinsured Motorist

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	-0.2%	1.000
2nd Year	12/31/89		0.999
Technical Start of Recession	05/15/90	-19.8%	0.999
Technical End of Recession	05/15/91		0.801
Hit Bottom	11/13/91	8.3%	0.717
Midpoint of Filing	07/01/93		0.817
End of Recovery	11/12/95		0.988
Filing trend:			-5.2%

Technical Appendix
Calculation of Filing Trend
Property Damage

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	7.4 %	1.000
2nd Year	12/31/89		1.022
Technical Start of Recession	05/15/90	-5.1 %	1.049
Technical End of Recession	05/15/91		0.995
Hit Bottom	11/13/91	12.5 %	0.969
Midpoint of Filing	07/01/93		1.175
End of Recovery	11/12/95		1.553
Filing trend:			4.3 %

Technical Appendix
 Calculation of Filing Trend
 Collision (\$100 Deductible)

Appendix 3
 Exhibit 4
 Page 11 of 14

Product:
 Pre-OMPP System
 (Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.8%	1.000
2nd Year	12/31/89		1.017
Technical Start of Recession	05/15/90	-6.6%	1.038
Technical End of Recession	05/15/91		0.970
Hit Bottom	11/13/91	10.8%	0.938
Midpoint of Filing	07/01/93		1.110
End of Recovery	11/12/95		1.416
Filing trend:			2.8%

Technical Appendix
Calculation of Filing Trend
Collision (\$200 and Higher Deductibles)

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	8.5 %	1.000
2nd Year	12/31/89		1.025
Technical Start of Recession	05/15/90	-4.2 %	1.056
Technical End of Recession	05/15/91		1.012
Hit Bottom	11/13/91	13.7 %	0.991
Midpoint of Filing	07/01/93		1.221
End of Recovery	11/12/95		1.654
Filing trend:			5.4 %

Technical Appendix
Calculation of Filing Trend
Comprehensive (\$25 Deductible)

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.3%	1.000
2nd Year	12/31/89		1.016
Technical Start of Recession	05/15/90	24.1%	1.035
Technical End of Recession	05/15/91		1.285
Hit Bottom	11/13/91	-1.0%	1.432
Midpoint of Filing	07/01/93		1.408
End of Recovery	11/12/95		1.375
Filing trend:			9.4%

Technical Appendix
Calculation of Filing Trend
Comprehensive (\$50 Deductible)

Appendix 3
Exhibit 4
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Product:
Pre-OMPP System
(Assumes OMPP Never Existed)

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	6.1%	1.000
2nd Year	12/31/89		1.018
Technical Start of Recession	05/15/90	25.1%	1.040
Technical End of Recession	05/15/91		1.301
Hit Bottom	11/13/91	-0.3%	1.455
Midpoint of Filing	07/01/93		1.450
End of Recovery	11/12/95		1.441
Filing trend:			10.3%

Technical Appendix
Calculation of Filing Trend
Bodily Injury Liability

Appendix 3
Exhibit 5
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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.8%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	2.4%	1.065
Start Of OMPP	06/22/90	2.4%	1.067
Technical End of Recession	05/15/91		1.090
Hit Bottom	11/13/91	12.7%	1.102
Midpoint of Filing	07/01/93		1.340
End of Recovery	11/12/95		1.780
Filing trend:			8.0%

Technical Appendix
Calculation of Filing Trend
Income Benefits

Appendix 3
Exhibit 5
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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Start Of OMPP	06/22/90	-13.2%	1.050
Technical End of Recession	05/15/91		0.925
Hit Bottom	11/13/91	15.9%	0.862
Midpoint of Filing	07/01/93		1.096
End of Recovery	11/11/96		1.800
Filing trend:			2.5%

Technical Appendix
Calculation of Filing Trend
Medical Benefits

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	22.7%	1.000
2nd Year	12/31/89		1.063
Technical Start of Recession	05/15/90	-1.4%	1.147
Start Of OMPP	06/22/90	-2.7%	1.145
Technical End of Recession	05/15/91		1.117
Hit Bottom	11/13/91	29.7%	1.102
Midpoint of Filing	07/01/93		1.685
End of Recovery	11/11/96		4.051
Filing trend:			14.7%

Technical Appendix
Calculation of Filing Trend
Medical Benefits Frequency

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	3.0%	1.000
2nd Year	12/31/89		1.009
Technical Start of Recession	05/15/90	-17.3%	1.020
Start Of OMPP	06/22/90	-17.3%	1.000
Technical End of Recession	05/15/91		0.844
Hit Bottom	11/13/91	10.0%	0.768
Midpoint of Filing	07/01/93		0.897
End of Recovery	11/11/96		1.236
	Filing trend:		-2.8%

Technical Appendix
Calculation of Filing Trend
Death Benefits

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Start Of OMPP	06/22/90	-18.9%	0.984
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Midpoint of Filing	07/01/93		0.829
End of Recovery	11/11/96		1.066
Filing trend:			-4.8%

Technical Appendix
Calculation of Filing Trend
Funeral Benefits

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Start Of OMPP	06/22/90	-18.9%	0.984
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Midpoint of Filing	07/01/93		0.829
End of Recovery	11/11/96		1.066
Filing trend:			-4.8%

Technical Appendix
Calculation of Filing Trend
Quebec Benefits

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.0%	1.000
2nd Year	12/31/89		1.015
Technical Start of Recession	05/15/90	-15.7%	1.033
Start Of OMPP	06/22/90	-15.7%	1.015
Technical End of Recession	05/15/91		0.872
Hit Bottom	11/13/91	12.1%	0.800
Midpoint of Filing	07/01/93		0.965
End of Recovery	11/11/96		1.419
Filing trend:			-0.9%

Technical Appendix
Calculation of Filing Trend
Uninsured Motorist

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	21.0%	1.000
2nd Year	12/31/89		1.059
Technical Start of Recession	05/15/90	-2.8%	1.136
Start Of OMPP	06/22/90	-2.8%	1.133
Technical End of Recession	05/15/91		1.104
Hit Bottom	11/13/91	29.2%	1.089
Midpoint of Filing	07/01/93		1.653
End of Recovery	11/11/96		3.920
Filing trend:			14.1%

Technical Appendix
Calculation of Filing Trend
Underinsured Motorist

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	-0.2%	1.000
2nd Year	12/31/89		0.999
Technical Start of Recession	05/15/90	-19.8%	0.999
Start Of OMPP	06/22/90	-19.8%	0.976
Technical End of Recession	05/15/91		0.801
Hit Bottom	11/13/91	8.3%	0.717
Midpoint of Filing	07/01/93		0.817
End of Recovery	11/12/95		0.988
Filing trend:			-5.2%

Technical Appendix
Calculation of Filing Trend
Property Damage

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	7.4 %	1.000
2nd Year	12/31/89		1.022
Technical Start of Recession	05/15/90	-5.4 %	1.049
Start Of OMPP	06/22/90	-5.1 %	1.043
Technical End of Recession	05/15/91		0.995
Hit Bottom	11/13/91	12.5 %	0.969
Midpoint of Filing	07/01/93		1.175
End of Recovery	11/12/95		1.553
Filing trend:			4.3 %

Technical Appendix
Calculation of Filing Trend
Collision (\$100 Deductible)

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.8%	1.000
2nd Year	12/31/89		1.017
Technical Start of Recession	05/15/90	-6.6%	1.038
Start Of OMPP	06/22/90	-6.6%	1.031
Technical End of Recession	05/15/91		0.970
Hit Bottom	11/13/91	10.8%	0.938
Midpoint of Filing	07/01/93		1.110
End of Recovery	11/12/95		1.416
Filing trend:			2.8%

Technical Appendix
Calculation of Filing Trend
Collision (\$200 and Higher Deductibles)

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	8.5%	1.000
2nd Year	12/31/89		1.025
Technical Start of Recession	05/15/90	-4.2%	1.056
Start Of OMPP	06/22/90	-4.2%	1.051
Technical End of Recession	05/15/91		1.012
Hit Bottom	11/13/91	13.7%	0.991
Midpoint of Filing	07/01/93		1.221
End of Recovery	11/12/95		1.654
Filing trend:			5.4%

Technical Appendix
Calculation of Filing Trend
Comprehensive (\$25 Deductible)

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.3%	1.000
2nd Year	12/31/89		1.016
Technical Start of Recession	05/15/90	24.1%	1.035
Start Of OMPP	06/22/90	24.1%	1.059
Technical End of Recession	05/15/91	-	1.285
Hit Bottom	11/13/91	-1.0%	1.432
Midpoint of Filing	07/01/93		1.408
End of Recovery	11/12/95		1.375
Filing trend:			9.4%

Technical Appendix
Calculation of Filing Trend
Comprehensive (\$50 Deductible)

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Product:
OMPP System

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	6.1%	1.000
2nd Year	12/31/89		1.018
Technical Start of Recession	05/15/90	25.1%	1.040
Start Of OMPP	06/22/90	25.1%	1.065
Technical End of Recession	05/15/91		1.301
Hit Bottom	11/13/91	-0.3%	1.455
Midpoint of Filing	07/01/93		1.450
End of Recovery	11/12/95		1.441
Filing trend:			10.3%

Technical Appendix
Calculation of Filing Trend
Bodily Injury Liability

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.8%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	2.4%	1.065
Start Of OMPP	06/22/90	2.4%	1.067
Technical End of Recession	05/15/91		1.090
Hit Bottom	11/13/91	12.7%	1.102
Filing Effective Date	07/01/92	12.7%	1.189
Start Safety Programs	01/01/93	7.6%	1.263
Midpoint of Filing	07/01/93		1.310
End of Recovery	11/12/95		1.559

Filing trend: 7.4%

Technical Appendix
Calculation of Filing Trend
Income Benefits

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	9.7%	1.000
2nd Year	12/31/89		1.028
Technical Start of Recession	05/15/90	-11.9%	1.064
Start Of OMPP	06/22/90	-13.2%	1.050
Technical End of Recession	05/15/91		0.925
Hit Bottom	11/13/91	15.9%	0.862
Filing Effective Date	07/01/92	14.6%	0.946
Start Safety Programs	01/01/93	9.5%	1.014
Midpoint of Filing	07/01/93		1.060
End of Recovery	11/11/96		1.438
Filing trend:			1.5%

Technical Appendix
Calculation of Filing Trend
Medical Benefits

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	22.7 %	1.000
2nd Year	12/31/89		1.063
Technical Start of Recession	05/15/90	-1.4 %	1.147
Start Of OMPP	06/22/90	-2.7 %	1.145
Technical End of Recession	05/15/91		1.117
Hit Bottom	11/13/91	29.7 %	1.102
Filing Effective Date	07/01/92	28.5 %	1.299
Start Safety Programs	01/01/93	23.4 %	1.474
Midpoint of Filing	07/01/93		1.636
End of Recovery	11/11/96		3.317
Filing trend:			13.8 %

Technical Appendix
Calculation of Filing Trend
Medical Benefits Frequency

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	3.0%	1.000
2nd Year	12/31/89		1.009
Technical Start of Recession	05/15/90	-17.3%	1.020
Start Of OMPP	06/22/90	-17.3%	1.000
Technical End of Recession	05/15/91		0.844
Hit Bottom	11/13/91	10.0%	0.768
Filing Effective Date	07/01/92	10.0%	0.815
Start Safety Programs	01/01/93	4.9%	0.855
Midpoint of Filing	07/01/93		0.876
End of Recovery	11/11/96		1.029
Filing trend:			-3.4%

Technical Appendix
Calculation of Filing Trend
Death Benefits

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Start Of OMPP	06/22/90	-18.9%	0.984
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Filing Effective Date	07/01/92	7.8%	0.770
Start Safety Programs	01/01/93	2.7%	0.799
Midpoint of Filing	07/01/93		0.810
End of Recovery	11/11/96		0.884
Filing trend:			-5.4%

Technical Appendix
Calculation of Filing Trend
Funeral Benefits

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	0.9%	1.000
2nd Year	12/31/89		1.003
Technical Start of Recession	05/15/90	-18.9%	1.006
Start Of OMPP	06/22/90	-18.9%	0.984
Technical End of Recession	05/15/91		0.815
Hit Bottom	11/13/91	7.8%	0.734
Filing Effective Date	07/01/92	7.8%	0.770
Start Safety Programs	01/01/93	2.7%	0.799
Midpoint of Filing	07/01/93		0.810
End of Recovery	11/11/96		0.884
Filing trend:			-5.4%

Technical Appendix
Calculation of Filing Trend
Quebec Benefits

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.0%	1.000
2nd Year	12/31/89		1.015
Technical Start of Recession	05/15/90	-15.7%	1.033
Start Of OMPP	06/22/90	-15.7%	1.015
Technical End of Recession	05/15/91		0.872
Hit Bottom	11/13/91	12.1%	0.800
Filing Effective Date	07/01/92	12.1%	0.860
Start Safety Programs	01/01/93	7.0%	0.912
Midpoint of Filing	07/01/93		0.943
End of Recovery	11/11/96		1.185
Filing trend:			-1.5%

Technical Appendix
Calculation of Filing Trend
Uninsured Motorist

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	21.0%	1.000
2nd Year	12/31/89		1.059
Technical Start of Recession	05/15/90	-2.8%	1.136
Start Of OMPP	06/22/90	-2.8%	1.133
Technical End of Recession	05/15/91		1.104
Hit Bottom	11/13/91	29.2%	1.089
Filing Effective Date	07/01/92	29.2%	1.280
Start Safety Programs	01/01/93	24.1%	1.457
Midpoint of Filing	07/01/93		1.621
End of Recovery	11/11/96		3.357
Filing trend:			13.6%

Technical Appendix
Calculation of Filing Trend
Underinsured Motorist

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	-0.2%	1.000
2nd Year	12/31/89		0.999
Technical Start of Recession	05/15/90	-19.8%	0.999
Start Of OMPP	06/22/90	-19.8%	0.976
Technical End of Recession	05/15/91		0.801
Hit Bottom	11/13/91	8.3%	0.717
Filing Effective Date	07/01/92	8.3%	0.754
Start Safety Programs	01/01/93	3.2%	0.785
Midpoint of Filing	07/01/93		0.798
End of Recovery	11/12/95		0.860
Filing trend:			-5.8%

Technical Appendix
Calculation of Filing Trend
Property Damage

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	7.4 %	1.000
2nd Year	12/31/89		1.022
Technical Start of Recession	05/15/90	-5.1 %	1.049
Start Of OMPP	06/22/90	-5.1 %	1.043
Technical End of Recession	05/15/91		0.995
Hit Bottom	11/13/91	12.5 %	0.969
Filing Effective Date	07/01/92	12.5 %	1.044
Start Safety Programs	01/01/93	7.4 %	1.108
Midpoint of Filing	07/01/93		1.148
End of Recovery	11/12/95		1.360
Filing trend:			3.7 %

Technical Appendix
Calculation of Filing Trend
Collision (\$100 Deductible)

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.8%	1.000
2nd Year	12/31/89		1.017
Technical Start of Recession	05/15/90	-6.6%	1.038
Start Of OMPP	06/22/90	-6.6%	1.031
Technical End of Recession	05/15/91		0.970
Hit Bottom	11/13/91	10.8%	0.938
Filing Effective Date	07/01/92	10.8%	1.001
Start Safety Programs	01/01/93	5.7%	1.054
Midpoint of Filing	07/01/93		1.084
End of Recovery	11/12/95		1.237
Filing trend:			2.2%

Technical Appendix
Calculation of Filing Trend
Collision (\$200 and Higher Deductibles)

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	8.5%	1.000
2nd Year	12/31/89		1.025
Technical Start of Recession	05/15/90	-4.2%	1.056
Start Of OMPP	06/22/90	-4.2%	1.051
Technical End of Recession	05/15/91		1.012
Hit Bottom	11/13/91	13.7%	0.991
Filing Effective Date	07/01/92	13.7%	1.074
Start Safety Programs	01/01/93	8.6%	1.146
Midpoint of Filing	07/01/93		1.194
End of Recovery	11/12/95		1.450
Filing trend:			4.8%

Technical Appendix
Calculation of Filing Trend
Comprehensive (\$25 Deductible)

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	5.3%	1.000
2nd Year	12/31/89		1.016
Technical Start of Recession	05/15/90	24.1%	1.035
Start Of OMPP	06/22/90	24.1%	1.059
Technical End of Recession	05/15/91		1.285
Hit Bottom	11/13/91	-1.0%	1.432
Filing Effective Date	07/01/92	-1.0%	1.423
Start Safety Programs	01/01/93	-1.0%	1.415
Midpoint of Filing	07/01/93		1.408
End of Recovery	11/12/95		1.375
Filing trend:			9.4%

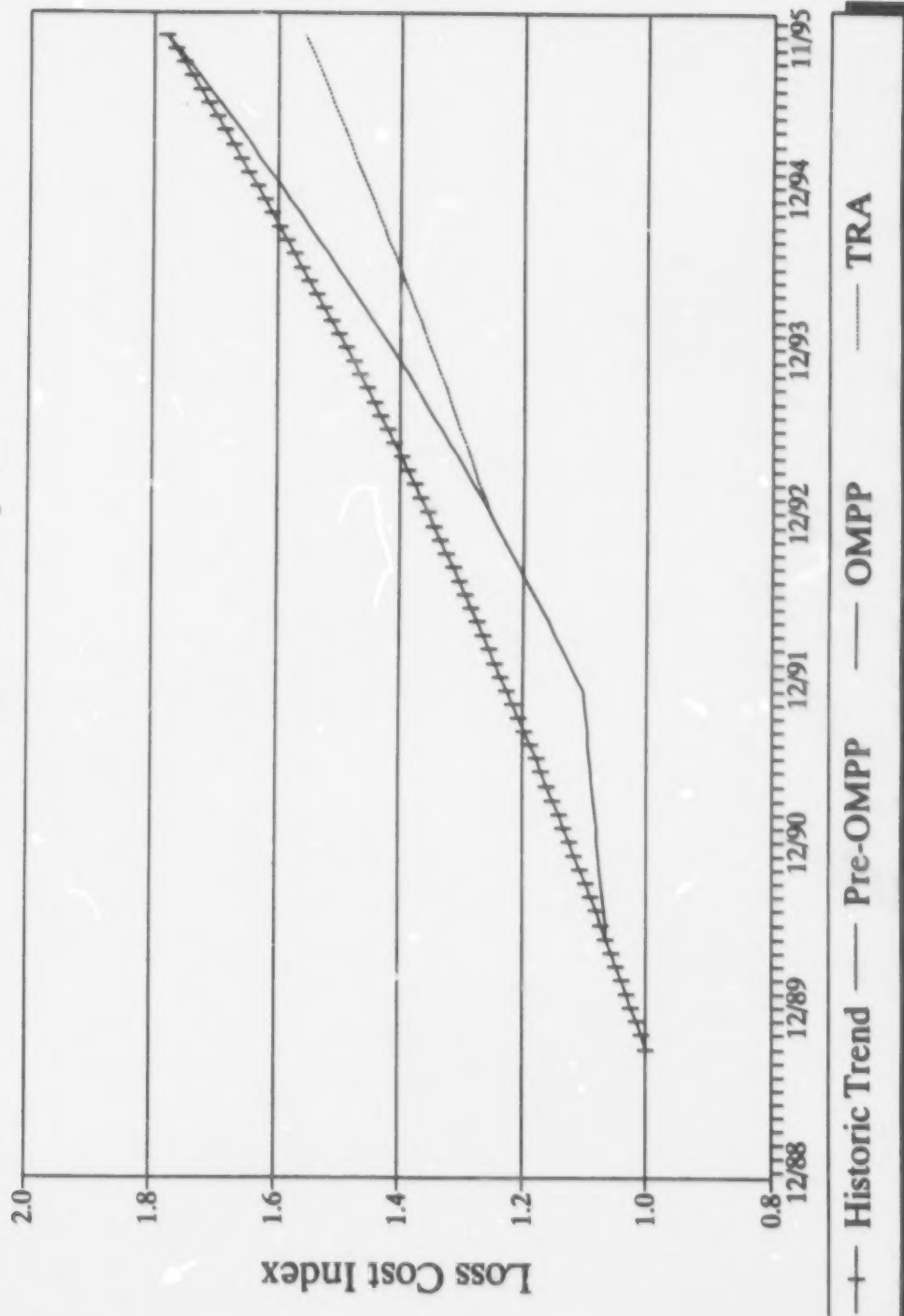
Technical Appendix
Calculation of Filing Trend
Comprehensive (\$50 Deductible)

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Product:
The Road Ahead

<u>Point</u>	<u>Accident Date</u>	<u>Annual Trend</u>	<u>Index</u>
1st Year	12/31/88		
Mid-Point of Experience	09/12/89	6.1%	1.000
2nd Year	12/31/89		1.018
Technical Start of Recession	05/15/90	25.1%	1.040
Start Of OMI-P	06/22/90	25.1%	1.065
Technical End of Recession	05/15/91		1.301
Hit Bottom	11/13/91	-0.3%	1.455
Filing Effective Date	07/01/92	-0.3%	1.453
Start Safety Programs	01/01/93	-0.3%	1.451
Midpoint of Filing	07/01/93		1.450
End of Recovery	11/12/95		1.441
Filing trend:			10.3%

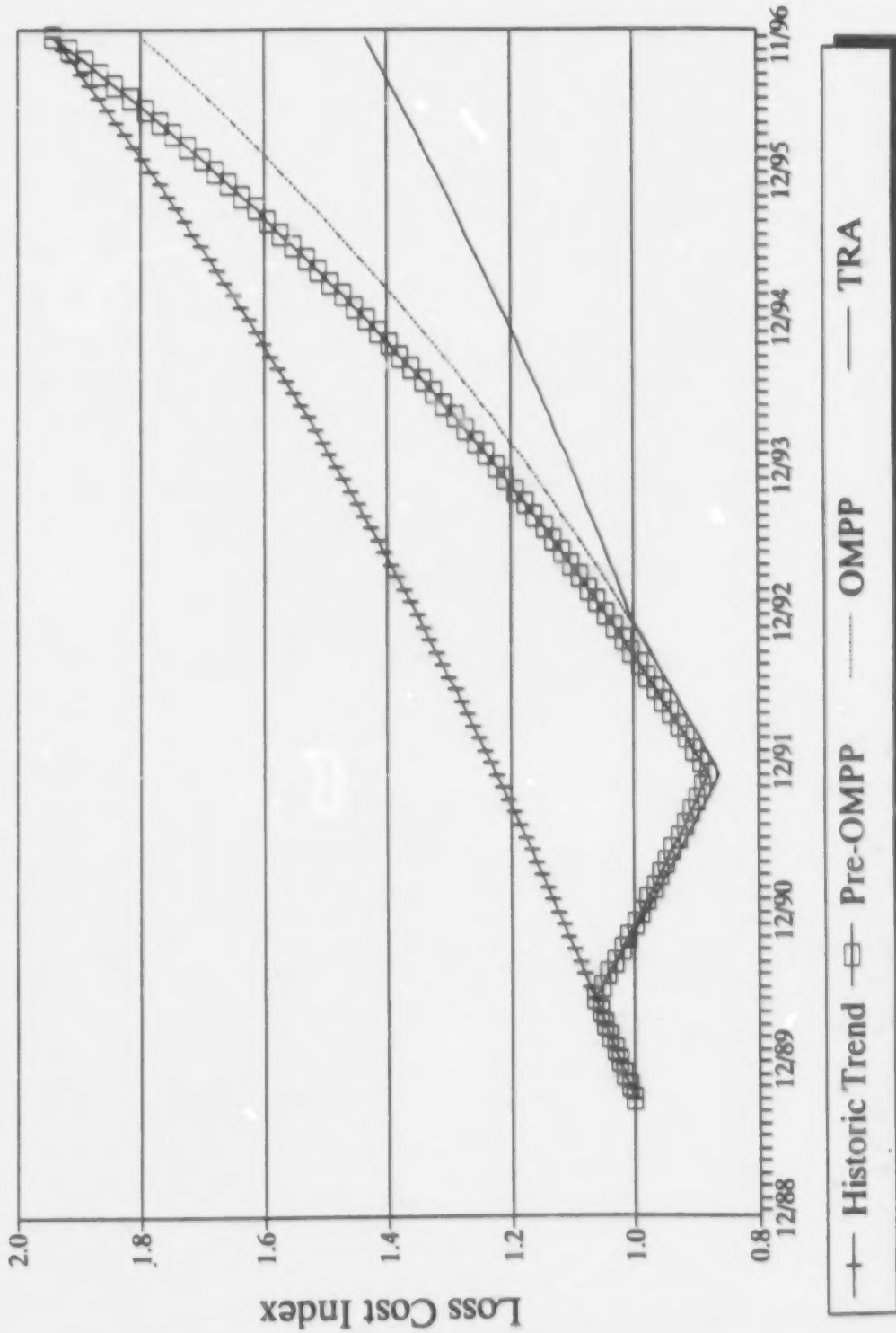
Bodily Injury Liability Trend Assumptions



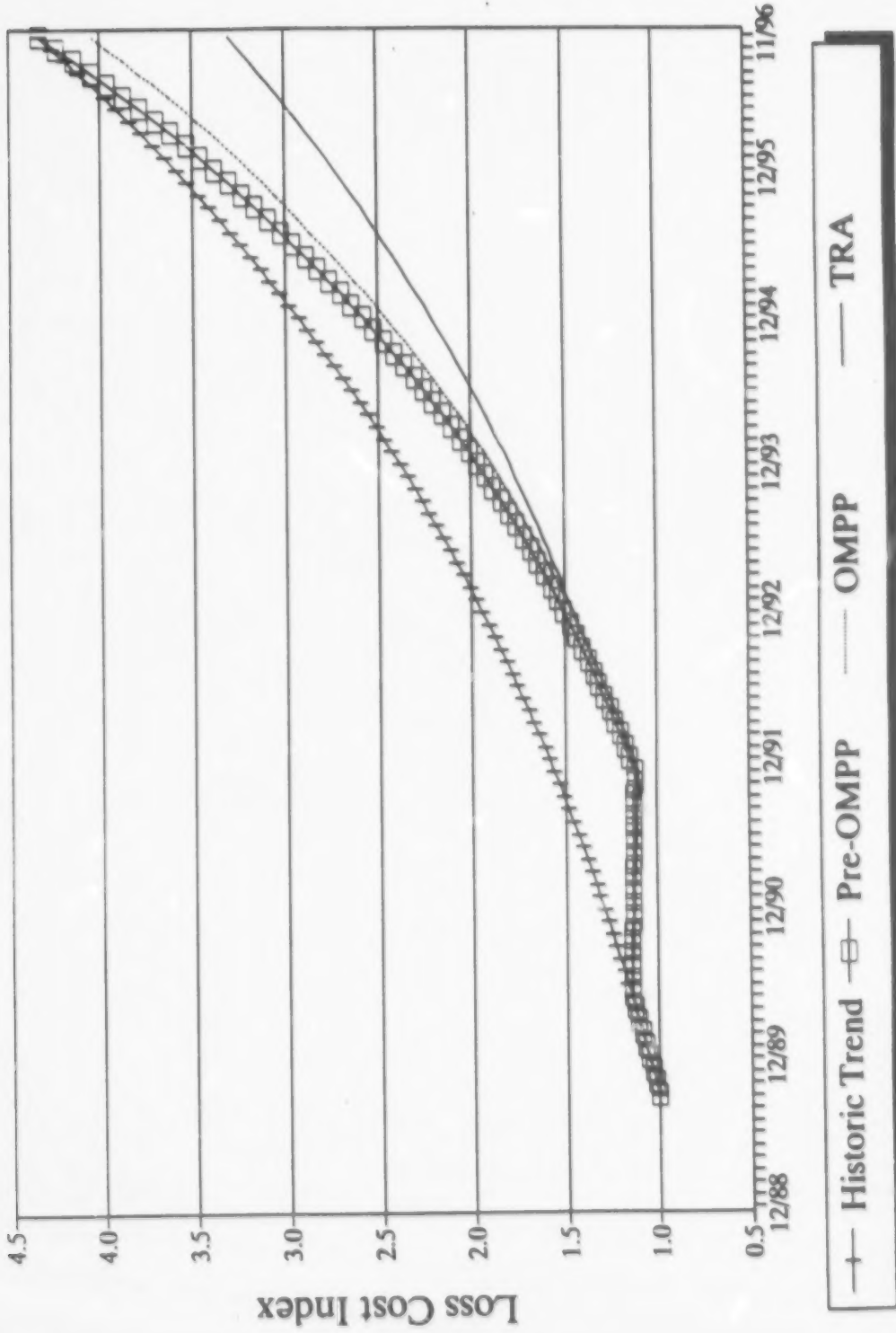
Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

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Income Benefits Trend Assumptions

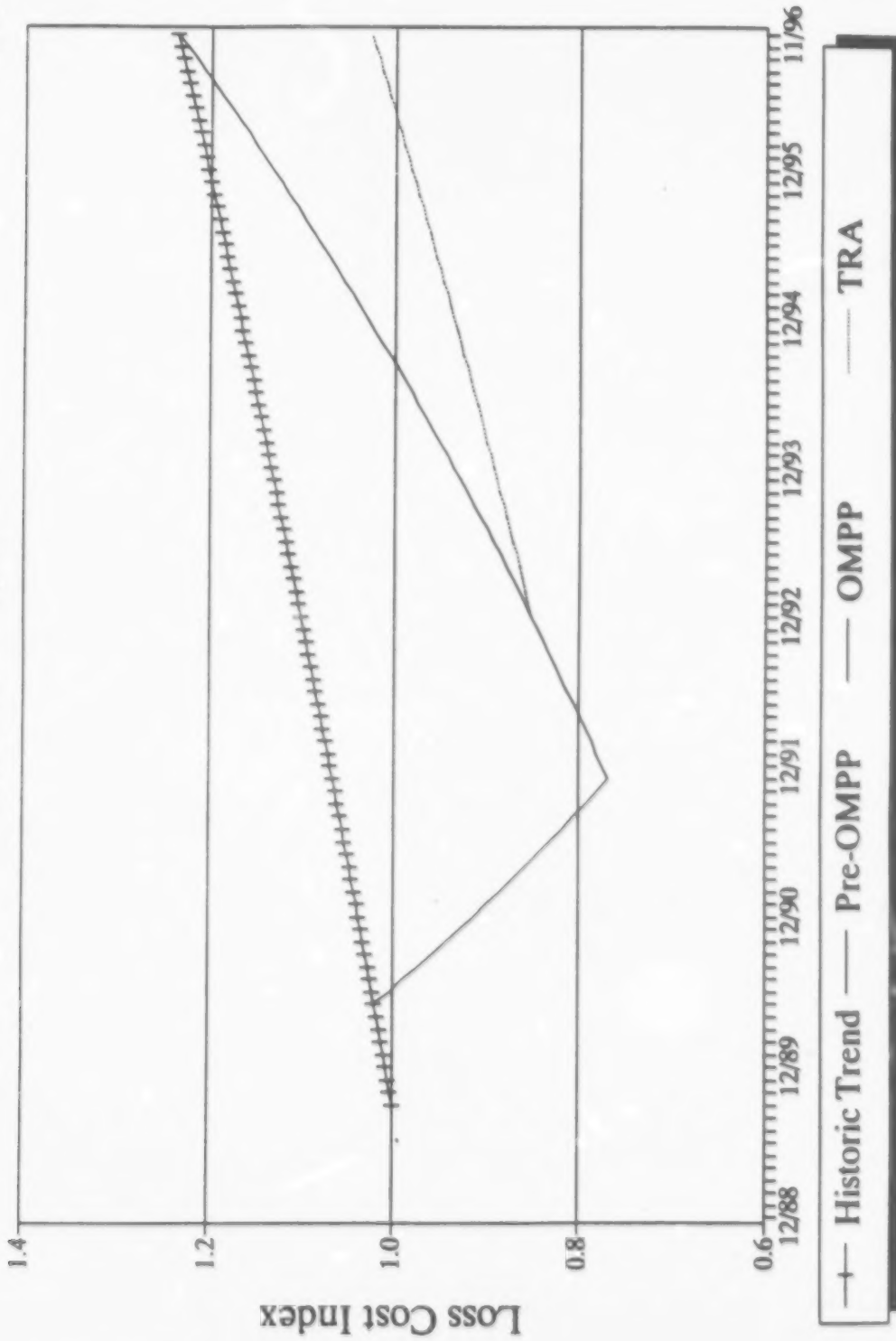


Medical Benefits Trend Assumptions



Medical Frequency Trend Assumptions

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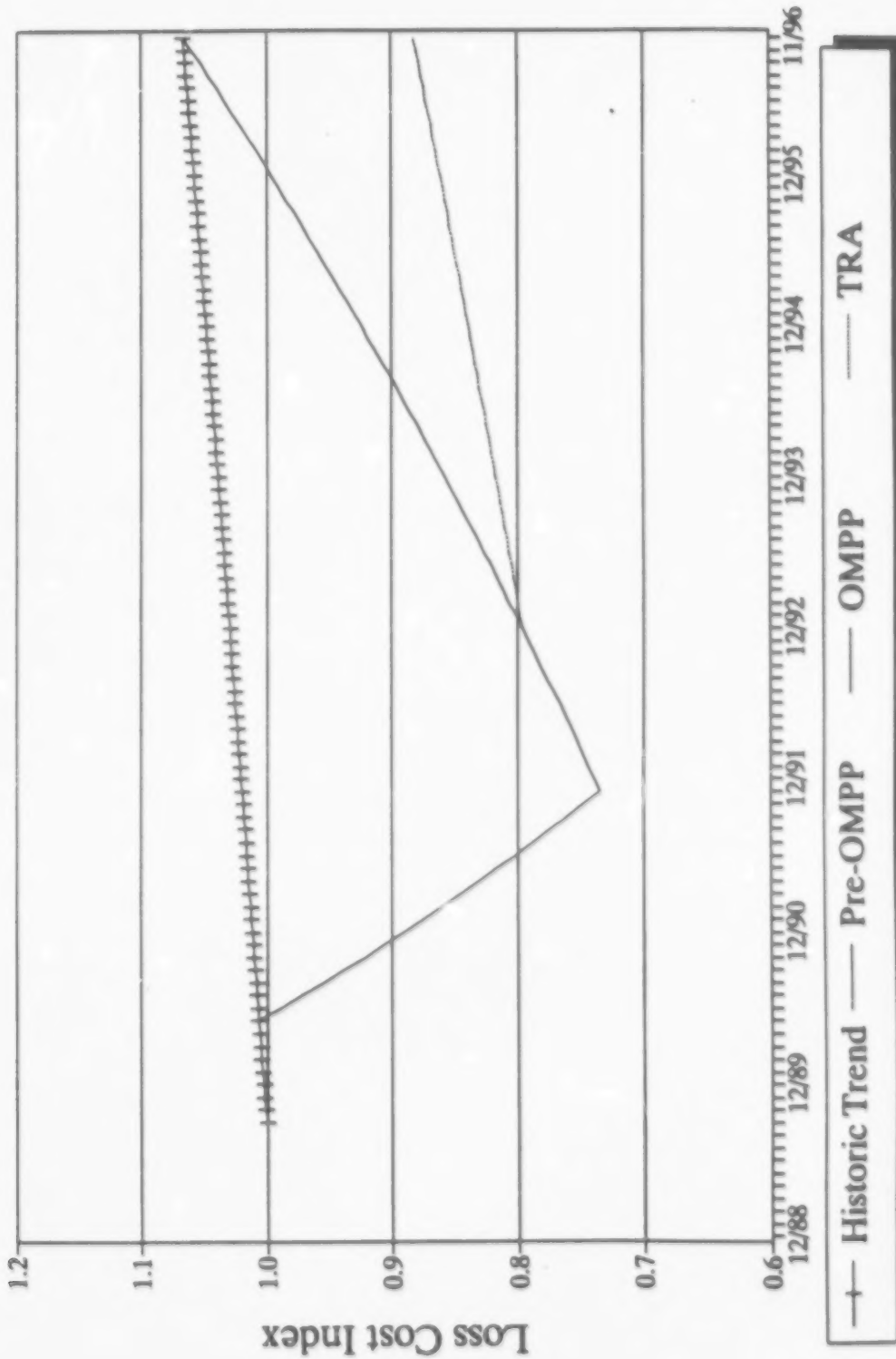


Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

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Death Benefits Trend Assumptions

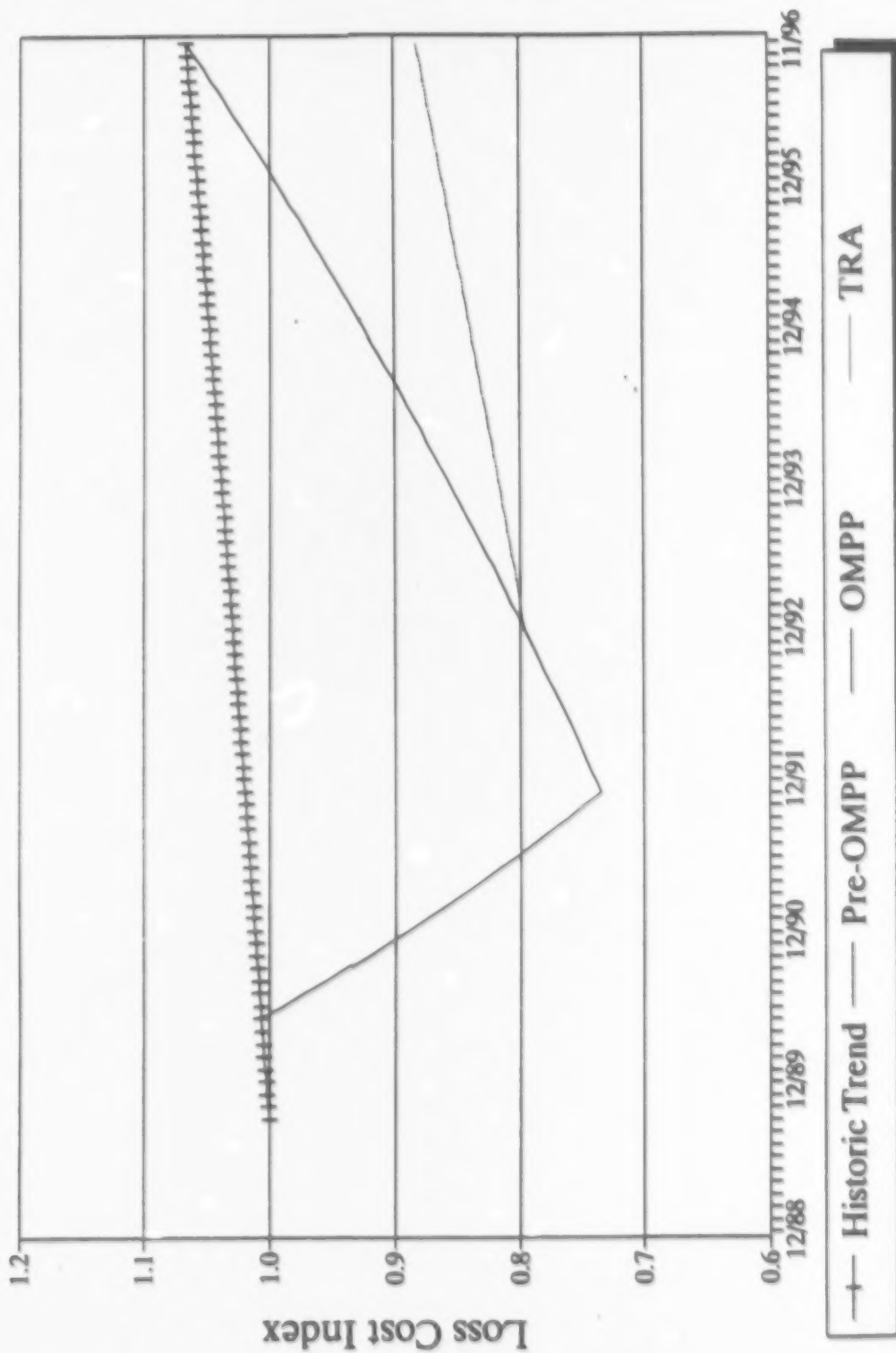
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Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

Funeral Benefits Trend Assumptions

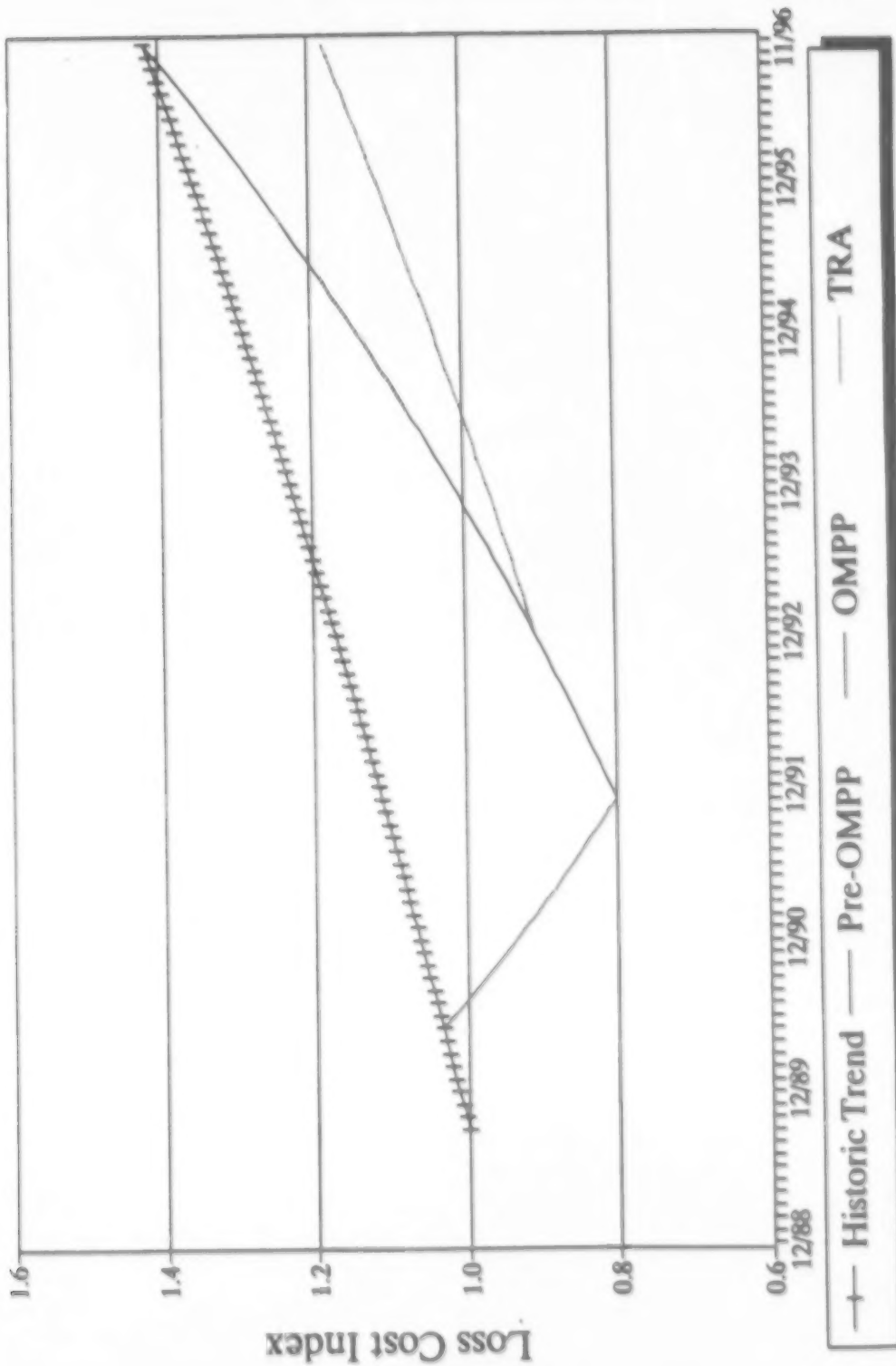
Appendix 3
Exhibit 7
Page 6 of 14



Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

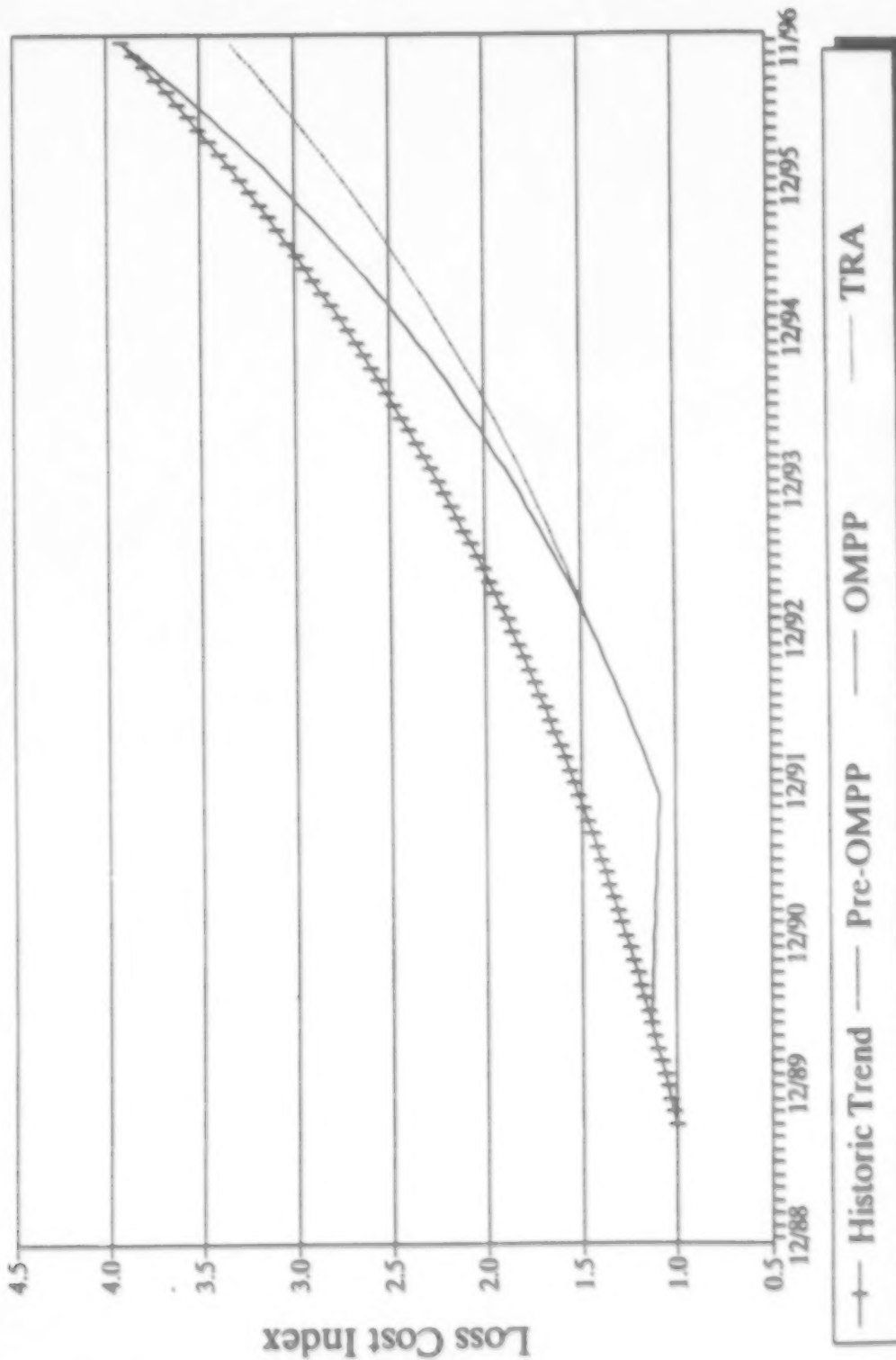
Quebec Benefits Trend Assumptions

Appendix 3
Exhibit 7
Page 7 of 14



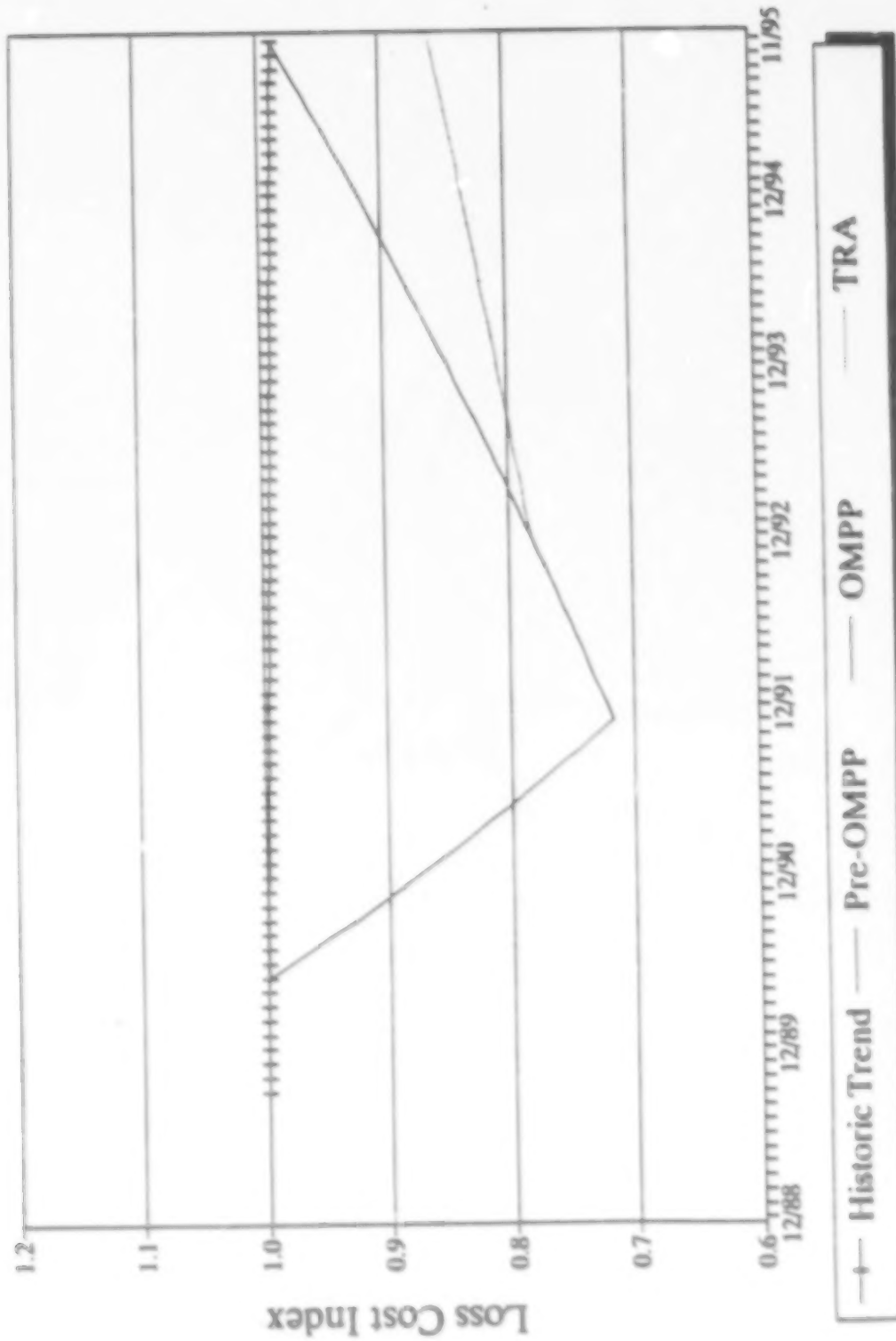
Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

Uninsured Motorist Trend Assumptions



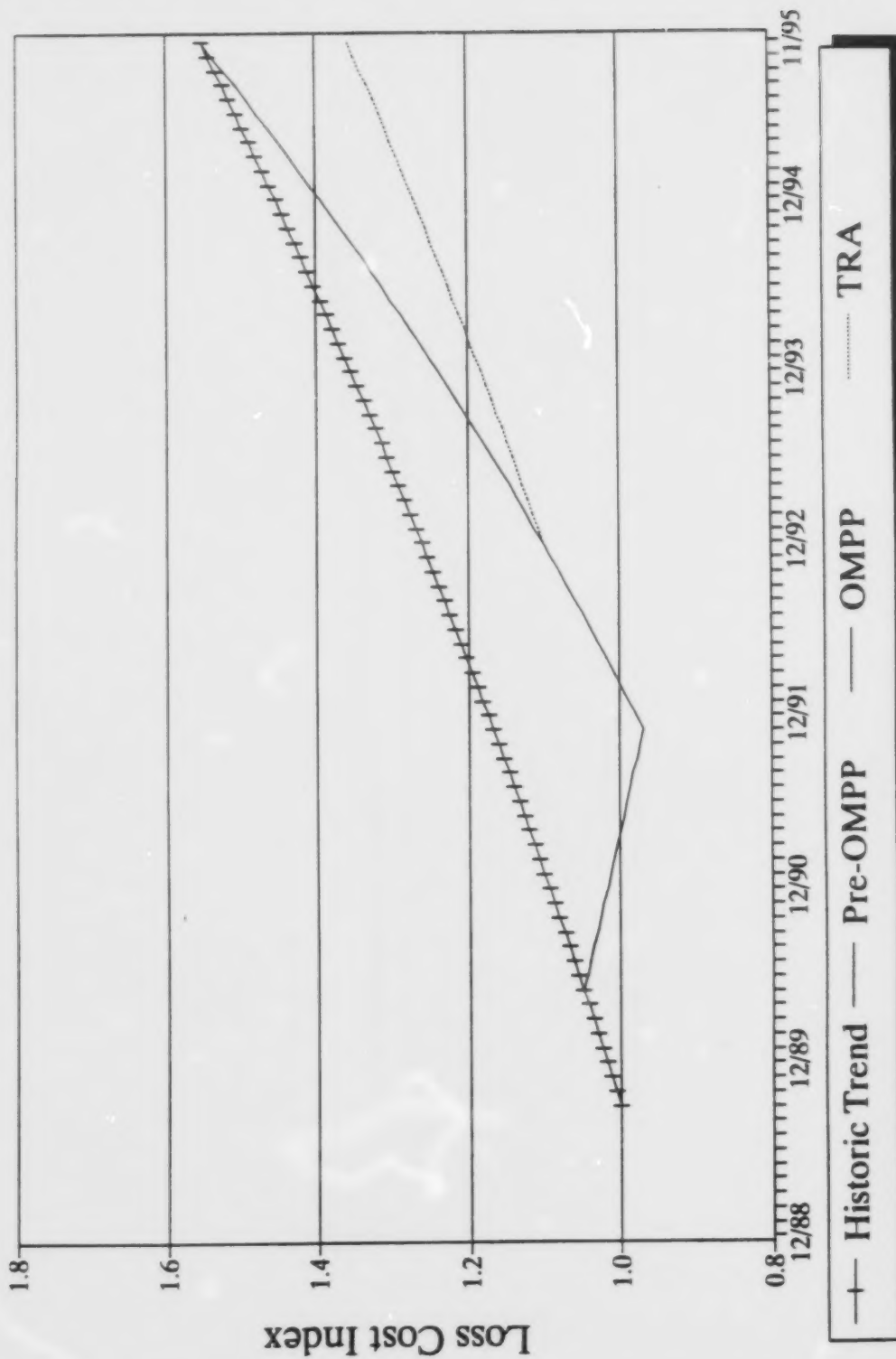
Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

Underinsured Motorist Trend Assumptions



Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

Property Damage Trend Assumptions

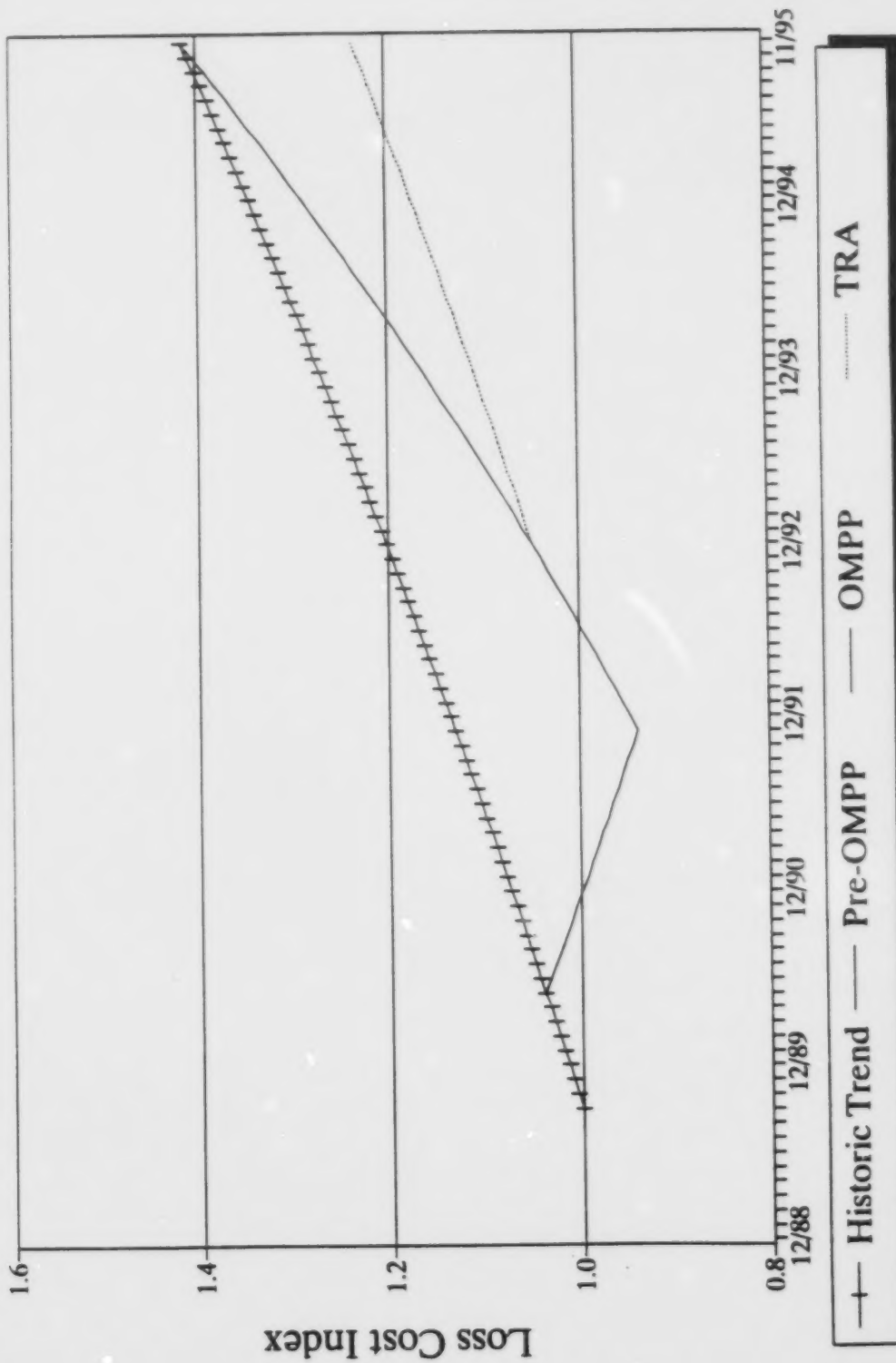


Note: Pre-OMPP and OMPP are trend assumptions are identical for this coverage.

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Collision - \$100 Deductible Trend Assumptions

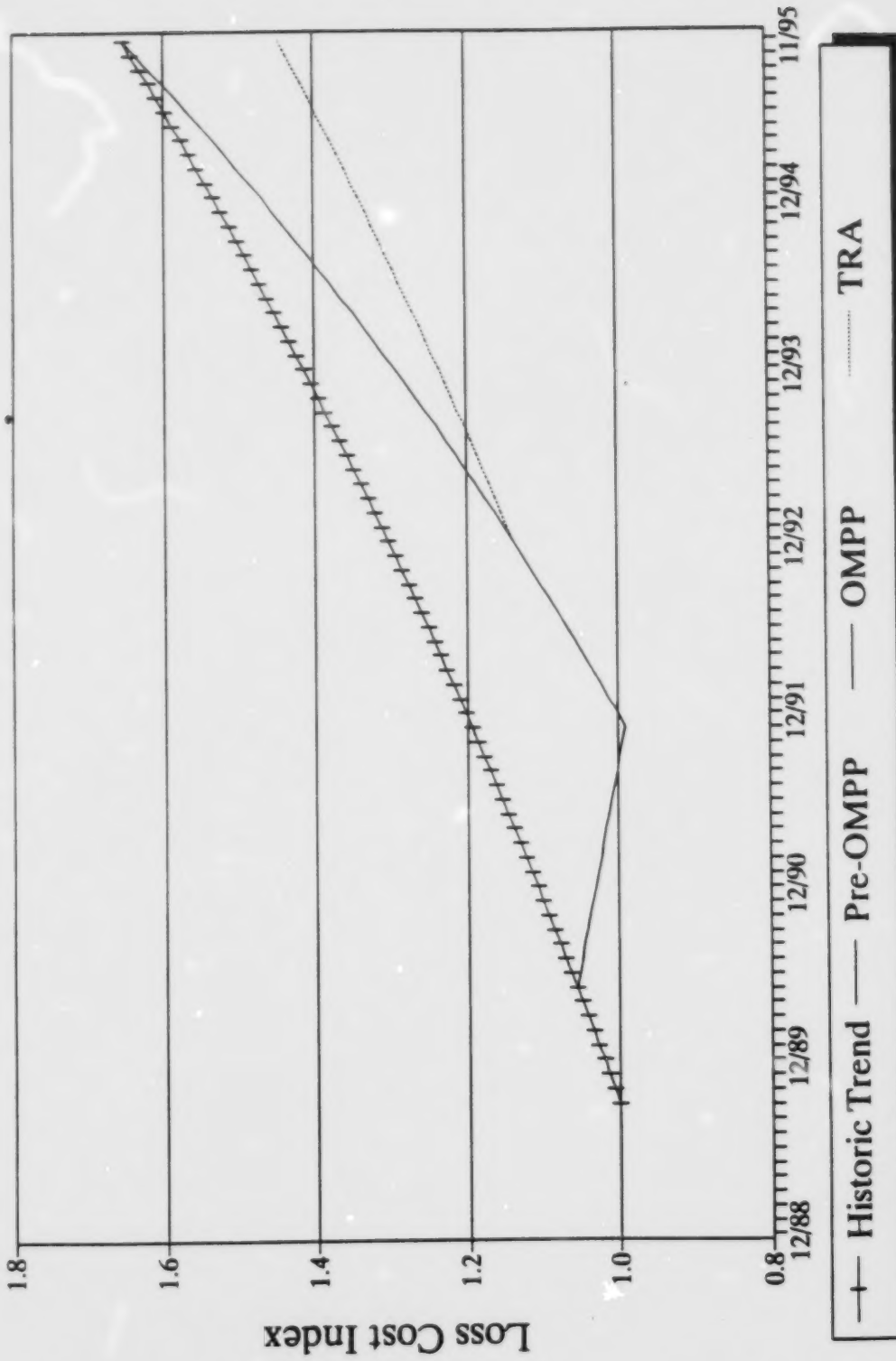
Technical Appendix



Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

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Collision - \$200 Deductible Trend Assumption

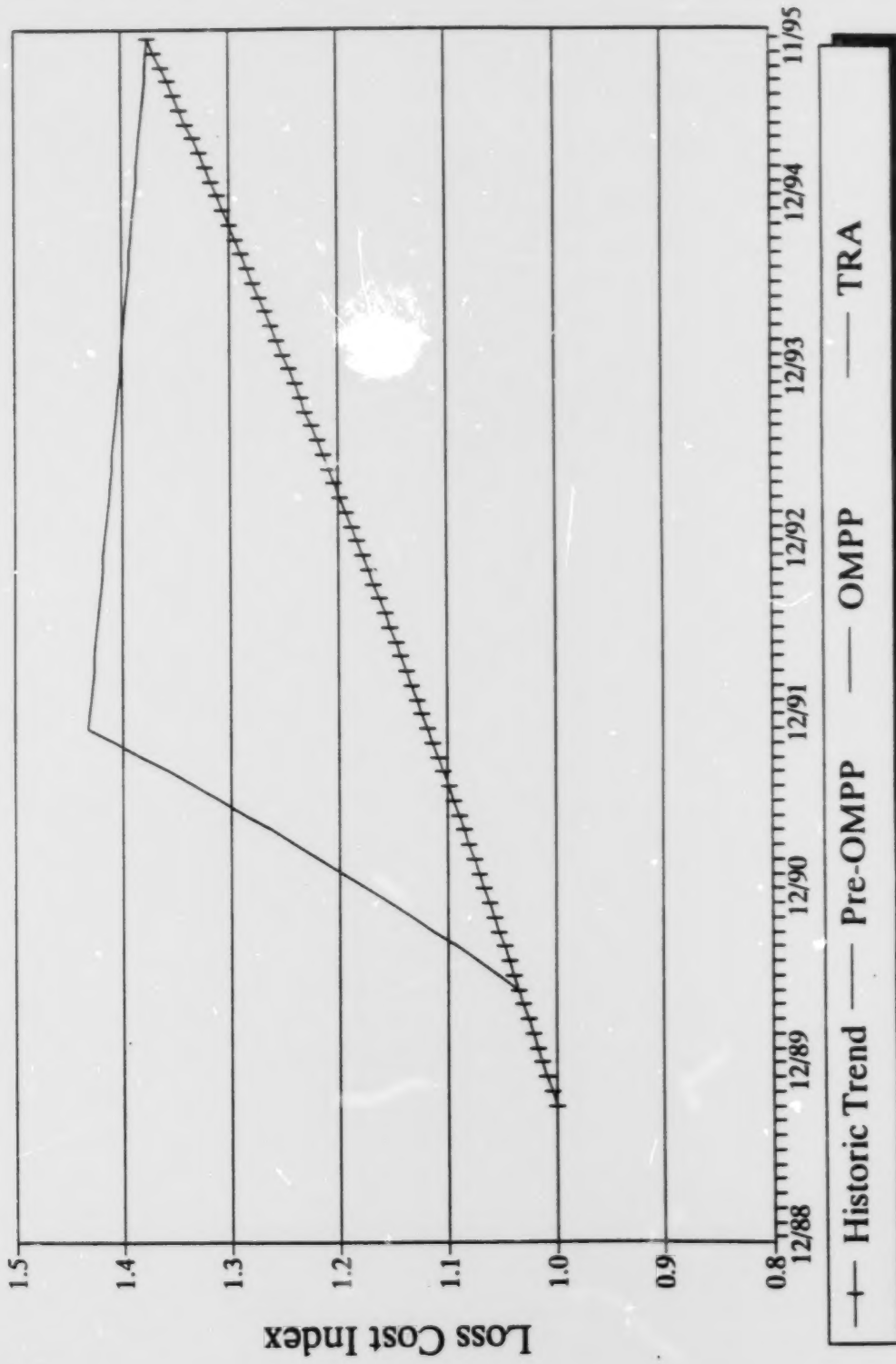


Note: Pre-OMPP and OMPP trend assumptions are identical for this coverage.

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Comprehensive - \$25 Deductible Trend Assumption

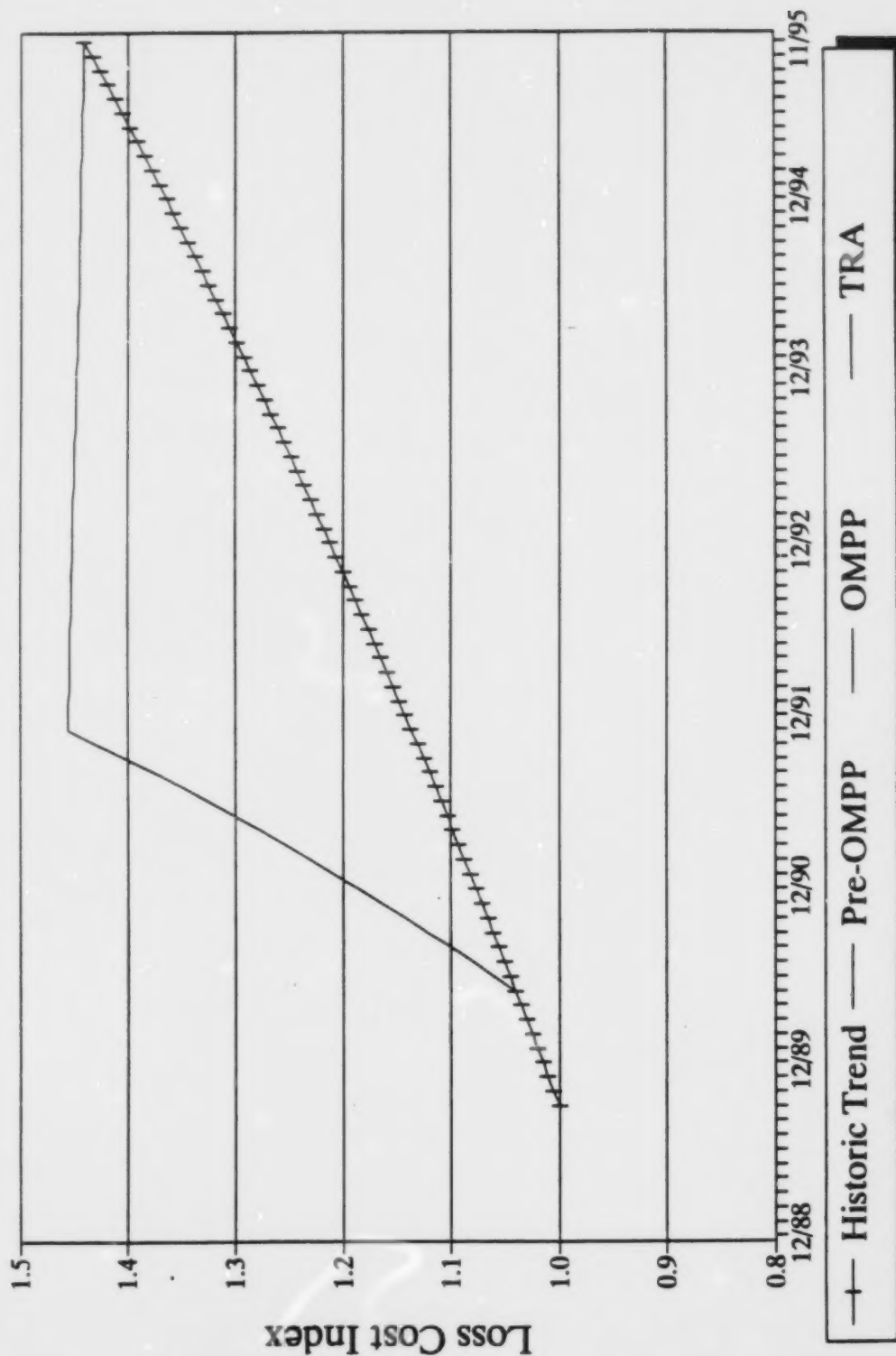
Appendix 3
Exhibit 7
Page 13 of 14



Note: Pre-OMPP, OMPP and TRA trend assumptions are identical for this coverage.

William M. Mercer Limited

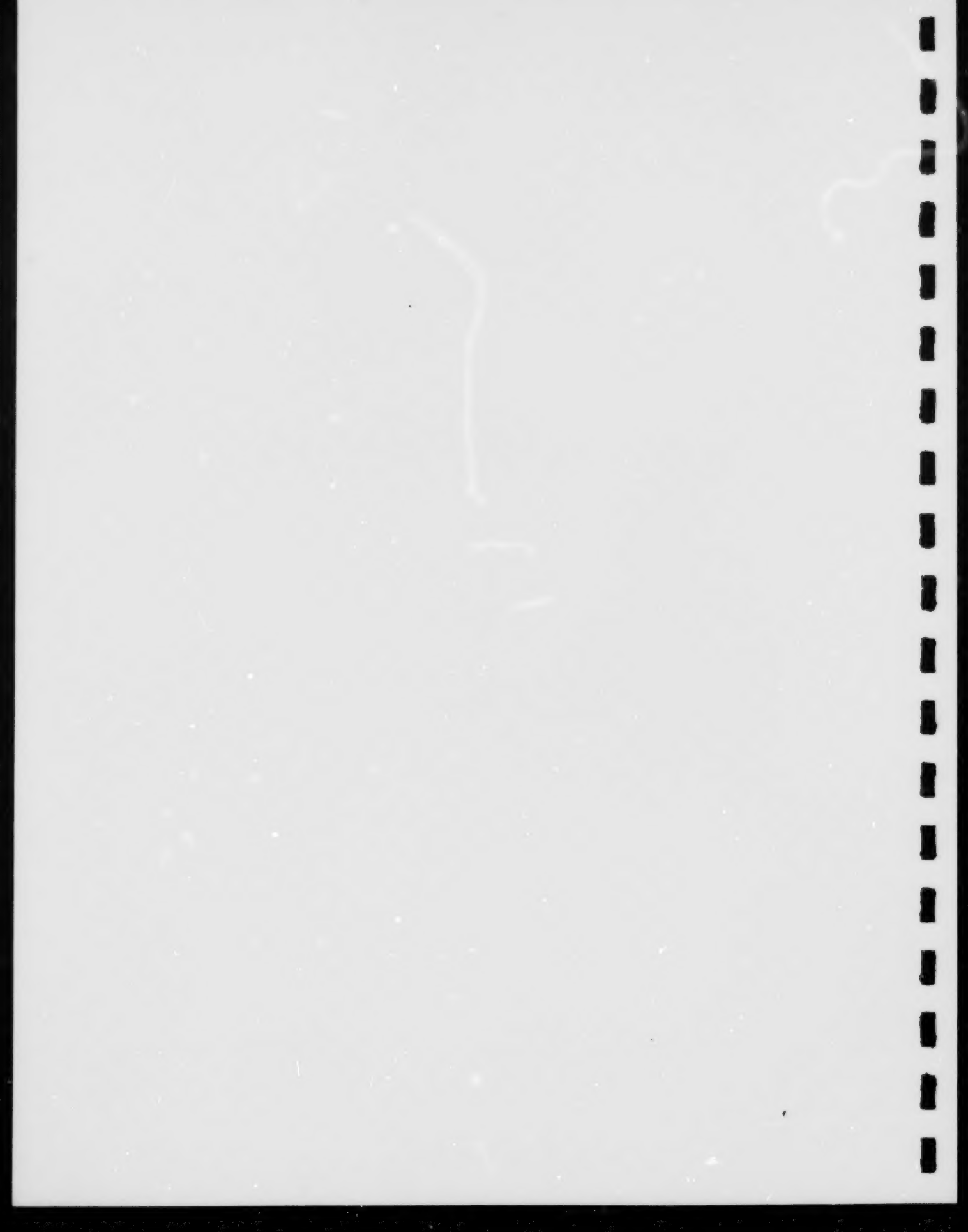
Comprehensive - \$50 Deductible Trend Assumptions



Note: Pre-OMPP, OMPP and TRA trend assumptions are identical for this coverage.

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APPENDIX 4



Technical Appendix
Derivation of Unallocated Loss Adjustment Expense Provision
Pre-OMPP Product

Appendix 4
Exhibit 1
Page 1 of 2

(1)	1989 ULAE as percent of written premium as reported in the 1989 IBC Direct Expense Report	5.9%
(2)	1989 ALAE as percent of written premium as reported in the 1989 IBC Direct Expense Report	6.0%
(3)	1989 written premium as reported in the 1989 IBC Direct Expense Report	\$3,150,271
(4)	1989 incurred losses, including ALAE and ULAE, as reported in the 1989 IBC Direct Expense Report	\$2,921,163
(5)	1989 ULAE as reported in the 1989 IBC Direct Expense Report	\$185,866
(6)	1989 ALAE as reported in the 1989 IBC Direct Expense Report	\$189,016
(7)	1989 incurred losses as reported in the 1989 IBC Direct Expense Report	\$2,546,281
(8)	1989 ULAE as percent of losses and ALAE based on information contained in the 1989 IBC Direct Expense Report	6.8%
(9)	Assumed cost impact on ULAE expenses resulting from GST	1.2%
(10)	Assumed average cost impact on Pre-OMPP losses and ALAE resulting from GST	2.7%
(11)	Assumed ULAE factor to be applied to losses and ALAE	1.067

Note: All \$ figures are in thousands.

Technical Appendix
Derivation of Unallocated Loss Adjustment Expense Provision
Pre-OMPP Product

Appendix 4
Exhibit 1
Page 2 of 2

Notes From Page 1

- (5) $(1) \times (3)$
- (6) $(2) \times (3)$
- (7) $(4) - (5) - (6)$
- (8) $(5)/[(6) + (7)]$
- (9) From Exhibit 3
- (10) Weighted average of GST impact presented in Exhibit 4
- (11) $\{[(8) \times (1.0 + (9))]/[1.0 + (10)]\} + 1.0$

Technical Appendix
Derivation of Unallocated Loss Adjustment Expense Provision
OMPP and TRA Product

Appendix 4
Exhibit 2
Page 1 of 2

(1)	1990 ULAE as percent of written premium as reported in the 1990 IBC Direct Expense Report	5.9%		
(2)	1990 ALAE as percent of written premium as reported in the 1990 IBC Direct Expense Report	5.0%		
(3)	1990 written premium as reported in the 1990 IBC Direct Expense Report	\$3,512,608		
(4)	1990 incurred losses, including ALAE and ULAE, as reported in the 1990 IBC Direct Expense Report	\$2,908,473		
(5)	1990 ULAE as reported in the 1990 IBC Direct Expense Report	\$207,244		
(6)	1990 ALAE as reported in the 1990 IBC Direct Expense Report	\$175,630		
(7)	1990 incurred losses as reported in the 1990 IBC Direct Expense Report	\$2,525,599		
(8)	1990 ULAE as percent of losses and ALAE based on information contained in the 1990 IBC Direct Expense Report	7.7%		
(9)	Assumed cost impact on ULAE expenses resulting from GST	1.2%		
			<u>OMPP</u>	<u>TRA</u>
(10)	Assumed average cost impact on Pre-OMPP losses and ALAE resulting from GST	2.7%	2.6%	
(11)	Assumed ULAE factor to be applied to losses and ALAE	1.076	1.076	

Note: All \$ figures are in thousands.

Technical Appendix
Derivation of Unallocated Loss Adjustment Expense Provision
OMPP and TRA Product

Appendix 4
Exhibit 2
Page 2 of 2

Notes from page 1 :

- (5) $(1) \times (3)$
- (6) $(2) \times (3)$
- (7) $(4) - (5) - (6)$
- (8) $(5)/[(6) + (7)]$
- (9) From Exhibit 3
- (10) Weighted average of GST impact presented in Exhibits 4 and 5
- (11) $\{[(8) \times (1.0 + (9))]/[1.0 + (10)]\} + 1.0$

The following are the assumptions we make in deriving the factors that are applied to adjust the loss costs for the estimated effects of the Federal Goods and Services Tax (GST). The assumptions are largely based on a study released by the IBC in August 1990.

The calculations of the GST factors are presented in Exhibit 4.

Assumptions

Bodily Injury Liability, Uninsured Motorist-BI and Underinsured Motorist

- Party and party costs will increase by 7% (IBC)
- Income losses (excluding ALAE) will increase by 1.2% (IBC)
- Party and party costs represent approximately 11.9% of Pre-OMPP pure (excluding ALAE) loss costs (Mercer analysis of Osborne Inquiry database) and 10.5% of OMPP and 12.9% of TRA pure loss costs (Mercer analysis of the Osborne Inquiry database as applied to the OMPP and TRA products)
- Loss of income represents approximately 25.0% of Pre-OMPP pure loss costs (Mercer analysis of Osborne Inquiry database), 35% of OMPP pure loss costs (Mercer analysis of Osborne Inquiry database as applied to the OMPP product), and 0.0% of TRA pure loss costs

Property Damage, Collision, Comprehensive and Uninsured Motorist-PD

- Used car prices, estimated to represent 10.0% of pure loss costs, will increase by 3.3% (IBC)
- Parts, estimated to represent 40.0% of pure loss costs, will increase by 1% (IBC)
- Labour, estimated to represent 35.0% of pure loss costs, will increase by 7.6% (IBC)
- Loss of use, estimated to represent 10.0% of pure loss costs, will increase by 7% (IBC)
- Other costs, estimated to represent 5.0% of pure loss costs, will increase by 1.2% (IBC)

Accident Benefits

- Funeral benefits losses (excluding ALAE) will increase by the full 7% effect of the GST
- Death benefits will not be affected by the GST
- Income benefits losses (excluding ALAE) will increase by 1.2% (Federal Government's estimated resulting general price increase)

- Medical benefits losses (excluding ALAE) will increase by 0.6% (half of the estimated general price increase; reflects assumed impact on care costs, and rehabilitation/renovation costs, and exclusion of certain medical costs from GST applicability)
- Quebec benefits losses (excluding ALAE) will increase by 0.6% (half of the estimated general price increase)

Allocated Loss Adjustment Expense

- ALAE will increase by 5.1% (IBC)
- ALAE represents 6.9% of losses and ALAE under Pre-OMPP; and 6.4% under OMPP and TRA (Mercer analysis of IBC Direct Expense Report)

Unallocated Loss Adjustment Expense

- ULAE will increase by 1.2% (IBC)

Coverages:

Bodily Injury Liability, Uninsured Motorist-BI, Underinsured Motorist

(1)	Estimated percent of pure losses attributed to party and party costs	11.9%
(2)	Estimated percent increase in party and party costs	7.0%
(3)	Estimated percent of pure losses attributed to income costs	25.0%
(4)	Estimated percent increase in income costs	1.2%
(5)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(6)	Estimated percent increase in ALAE costs	5.1%
(7)	Estimated GST factor to be applied to loss cost	1.014

Notes:

(1)-(6) Refer to Exhibit 3

(7) $(1 + (((1 \times (2)) + ((3) \times (4)))) \times (1 - (5)) + (1 + (6)) \times (5))$

Coverage:

Income Benefits

(1)	Estimated percent increase in pure loss costs	1.2%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.015

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Medical Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Death Benefits

(1)	Estimated percent increase in pure loss costs	0.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.004

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Funeral Benefits

(1)	Estimated percent increase in pure loss costs	7.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.069

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1-(2))) + (2) \times (3)$

Coverage:

Quebec Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

(1)-(3) Refer to Exhibit 3

(4) $1 + ((1) \times (1 - (2))) + (2) \times (3))$

Coverages:

Uninsured Motorist - PD, Property Damage, Collision, Comprehensive

(1)	Estimated percent increase in pure loss costs	4.2%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.9%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.043

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Bodily Injury Liability, Uninsured Motorist-BI, Underinsured Motorist

(1)	Estimated percent of pure losses attributed to party and party costs	10.5%
(2)	Estimated percent increase in party and party costs	7.0%
(3)	Estimated percent of pure losses attributed to income costs	35.0%
(4)	Estimated percent increase in income costs	1.2%
(5)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(6)	Estimated percent increase in ALAE costs	5.1%
(7)	Estimated GST factor to be applied to loss cost	1.014

Notes:

- (1)-(6) Refer to Exhibit 3
(7) $(1 + (((1) \times (2)) + ((3) \times (4)))) \times (1 - (5)) + (1 + (6)) \times (5)$

Coverage:

Income Benefits

(1)	Estimated percent increase in pure loss costs	1.2%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.014

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Medical Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Death Benefits

(1)	Estimated percent increase in pure loss costs	0.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.003

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1-(2))) + (2) \times (3))$

Coverage:

Funeral Benefits

(1)	Estimated percent increase in pure loss costs	7.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.069

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Quebec Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

(1)-(3) Refer to Exhibit 3

(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverages:

Uninsured Motorists - PD, Property Damage, Collision, Comprehensive

(1)	Estimated percent increase in pure loss costs	4.2%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.043

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1-(2))) + (2) \times (3)$

Coverages:

Bodily Injury Liability, Uninsured Motorist-BL, Underinsured Motorist

(1)	Estimated percent of pure losses attributed to party and party costs	12.9%
(2)	Estimated percent increase in party and party costs	7.0%
(3)	Estimated percent of pure losses attributed to income costs	0.0%
(4)	Estimated percent increase in income costs	1.2%
(5)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(6)	Estimated percent increase in ALAE costs	5.1%
(7)	Estimated GST factor to be applied to loss cost	1.012

Notes:

(1)-(6) Refer to Exhibit 3

(7) $(1 + (((1) \times (2)) + ((3) \times (4)))) \times (1 - (5)) + (1 + (6)) \times (5)$

Coverage:

Income Benefits

(1)	Estimated percent increase in pure loss costs	1.2%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.014

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Medical Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

(1)-(3) Refer to Exhibit 3

(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Death Benefits

(1)	Estimated percent increase in pure loss costs	0.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.003

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Funeral Benefits

(1)	Estimated percent increase in pure loss costs	7.0%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.069

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverage:

Quebec Benefits

(1)	Estimated percent increase in pure loss costs	0.6%
(2)	Estimated percent of pure losses and ALAE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.009

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

Coverages:

Uninsured Motorist - PD, Property Damage, Collision, Comprehensive

(1)	Estimated percent increase in pure loss costs	4.2%
(2)	Estimated percent of pure losses and ALE attributed to ALAE	6.4%
(3)	Estimated percent increase in ALAE costs	5.1%
(4)	Estimated GST factor to be applied to loss cost	1.043

Notes:

- (1)-(3) Refer to Exhibit 3
(4) $1 + ((1) \times (1 - (2))) + (2) \times (3)$

APPENDIX 5

Technical Appendix
Description of Method Used to Allocate Bodily Injury Liability Losses
By Economic and Non-economic Damages

Appendix 5
Exhibit 1
Page 1 of 2

- (1) The Osborne Inquiry bodily injury liability database defines the "total amount of payment to claimant" as consisting of:
 - (a) "special damages"
 - (b) "general damages"
 - (c) "party and party costs"
 - (d) "prejudgment interest"
- (2) The Osborne Inquiry database defines "special damages" as consisting of:
 - (a) "loss of employment income to trial or settlement"
 - (b) "other income loss"
 - (c) "medical and hospital"
 - (d) "funeral expense"
 - (e) "other damages"
- (3) The Osborne Inquiry database defines "general damages" as consisting of:
 - (a) "non-pecuniary loss"
 - (b) "FLA"
 - (c) "future employment income"
 - (d) "future income"
 - (e) "gross-up for tax"
 - (f) "fund management"
- (4) We assumed that 90% of FLA loss payments associated with non-death cases, and 50% of FLA loss payments associated with death cases are non-economic losses ("Non-economic FLA Losses")
- (5) We assumed that 10% of FLA loss payments associated with non-death cases, and 50% of FLA loss payments associated with death cases are economic losses ("Economic FLA Losses")
- (6) We trended the "Non-economic FLA Losses" to PY 92/93 cost levels at a trend rate of 9.3% per year ("Trended Non-economic FLA Losses")
- (7) We derived "Trended Capped Non-pecuniary Losses" by trending the "non-pecuniary losses" to PY 92/93 cost levels, with losses capped at \$250,000 indexed
- (8) We derived "Trended Preliminary Non-economic Losses" by adding the "Trended Capped Non-pecuniary Losses" and the "Trended Non-economic FLA Losses"
- (9) We derived "Trended Preliminary Economic Losses" by trending the "special damages" and "general damages," then subtracting "Trended Non-economic FLA Losses"
- (10) "Trended Preliminary Losses" is the sum of "Trended Preliminary Non-economic Losses" and "Trended Preliminary Economic Losses"

Technical Appendix
Description of Method Used to Allocate Bodily Injury Liability Losses
By Economic and Non-economic Damages

Appendix 5
Exhibit 1
Page 2 of 2

- (11) We derived "Non-economic Party and Party Costs" by applying the ratio of "Trended Preliminary Non-economic Losses" to "Trended Preliminary Losses"
- (12) We derived "Economic Party and Party Costs" by subtracting "Non-economic Party and Party Costs from "party and party costs"
- (13) We trended the "Non-economic Party and Party Costs" to PY 92/93 cost levels at a trend rate of 9.3% per year ("Trended Non-economic Party and Party Costs")
- (14) We trended the "Economic Party and Party Costs" to PY 92/93 cost levels at a trend rate of 9.3% per year ("Trended Economic Party and Party Costs")
- (15) We derived "Current Law Non-economic Prejudgment Interest" by estimating accumulated interest on "non-pecuniary" and "Non-economic FLA Losses" under the current law (5% interest rate)
- (16) We derived "Current Law Economic Prejudgment Interest" by estimating accumulated interest on "special damages" and "Economic FLA Losses" under the current law
- (17) We derived "Pre-Law Change Total Prejudgment Interest" by estimating accumulated interest under the old system ("non-pecuniary" and "Non-economic FLA Losses" at 9% interest rate + "special damages" and "Economic FLA Losses" at 9% interest rate)
- (18) We derived "Adjusted Non-economic Prejudgment Interest" by multiplying "Prejudgment Interest" by the ratio of "Current Law Non-economic Prejudgment Interest" to "Pre-Law Change Total Prejudgment Interest"
- (19) We derived "Adjusted Economic Prejudgment Interest" by multiplying "Prejudgment Interest" by the ratio of "Current Law Economic Prejudgment Interest" to "Pre-Law Change Total Prejudgment Interest"
- (20) We trended the "Adjusted Non-economic Prejudgment Interest" to PY 92/93 cost levels at a trend rate of 9.3% per year ("Trended Adjusted Non-economic Prejudgment Interest")
- (21) We trended the "Adjusted Economic Prejudgment Interest" to PY 92/93 cost levels at a trend rate of 9.3% per year ("Trended Adjusted Economic Prejudgment Interest")
- (22) We derived "Trended Non-economic Losses" by adding the "Trended Preliminary Non-economic Losses," the "Trended Non-economic Party and Party Costs," and the "Trended Adjusted Non-economic Prejudgment Interest"
- (23) We derived "Trended Economic Losses" by adding the "Trended Preliminary Economic Losses," the "Trended Economic Party and Party Costs," and the "Trended Adjusted Economic Prejudgment Interest"

Technical Appendix
Calculation of Estimated Bodily Injury Liability, Uninsured Motorist,
and Underinsured Motorist Loss Cost Under OMPP

Appendix 5
Exhibit 2
Page 1 of 4

(1) Bodily injury liability adjusted baseline loss cost	\$350.41
(2) Uninsured motorist adjusted baseline loss cost	\$28.90
(3) Underinsured motorist baseline loss cost	\$3.03
(4) Portion of uninsured motorist adjusted baseline loss cost attributed to bodily injury liability (balance attributed to property damage)	\$25.14
(5) Bodily injury liability loss penetration level	38.7%
(6) Uninsured motorist loss penetration level	30.3%
(7) Underinsured motorist loss penetration level	69.1%
(8) Percentage of losses attributed to out-of-province accidents	2.0%
(9) Bodily injury liability, uninsured motorist - bodily injury, and underinsured motorist discount factor under Pre-OMPP product	0.727
(10) Bodily injury liability discount factor under OMPP product	0.690
(11) Uninsured motorist - bodily injury liability discount factor under OMPP product	0.690
(12) Underinsured motorist discount factor under OMPP product	0.727
(13) Total Pre-OMPP adjusted baseline loss cost for accident benefits	\$45.61
(14) Total OMPP adjusted loss cost for accident benefits	\$124.28
(15) Accident benefits offset utilization level	63.0%
(16) Effect of elimination of the collateral source rule	3.0%

Technical Appendix
Calculation of Estimated Bodily Injury Liability, Uninsured Motorist,
and Underinsured Motorist Loss Cost Under OMPP

Appendix 5
Exhibit 2
Page 2 of 4

(17) Estimated bodily injury liability loss cost under OMPP prior to application of accident benefits offset	\$129.36
(18) Estimated uninsured motorist loss cost under OMPP prior to application of accident benefits offset	\$11.14
(19) Estimated underinsured motorist loss cost under OMPP prior to application of accident benefits offset	\$2.05
(20) Total accident benefits offset	\$18.17
(21) Accident benefits offset allocated to bodily injury liability	\$16.93
(22) Accident benefits offset allocated to uninsured motorist	\$0.97
(23) Accident benefits offset allocated to underinsured motorist	\$0.27
(24) Estimated bodily injury liability loss cost under OMPP reflecting accident benefits offset	\$112.42
(25) Estimated uninsured motorist loss cost under OMPP reflecting accident benefits offset	\$10.17
(26) Estimated underinsured motorist loss cost under OMPP reflecting accident benefits offset	\$1.78

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) From Actuarial Report, Section 5, Subsection 2.
- (3) From Actuarial Report, Section 5, Subsection 2.
- (4) Based on a review of insurance company rate filings, 90% of uninsured motorist losses are assumed to be related to bodily injury liability. The 90-10 split was applied prior to the application of ULAE, GST, and discount factors in deriving the uninsured motorist - bodily injury baseline loss cost.
- (5)-(7) These figures represent the estimated percentage of bodily injury liability, uninsured motorist - bodily injury, and underinsured motorist losses under a Pre-OMPP tort environment, that would continue to be paid under OMPP. The estimates are based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in Actuarial Report, Section 5, Subsection 2. The figures also reflect the application of a 5% discount rate in determining prejudgment interest for non-economic losses.
- (8) Based on Osborne Inquiry findings (1.1%), and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (9) From Appendix 2, Exhibit 2.
- (10) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the remaining bodily injury liability claims under OMPP will take approximately 8 months longer to settle than the bodily injury claims under Pre-OMPP. The average discount factor under OMPP is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (11) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the remaining uninsured motorist - bodily injury liability claims under OMPP will take approximately 8 months longer to settle than the uninsured motorist - bodily injury claims under Pre-OMPP. The average discount factor under OMPP is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (12) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the settlement period will not change for underinsured motorist claims under OMPP. We recognize that by virtue of our estimated Pre-OMPP discount factor for underinsured motorist, we are implicitly assuming that bodily injury liability and uninsured motorist claims will take longer to settle than underinsured motorist claims. This anomaly, however, is not viewed as material.
- (13) From Actuarial Report, Exhibit AR-12.
- (14) From Actuarial Report, Section 5, Subsection 2.

Notes:

- (15) Based on Osborne Inquiry survey findings, 70% of drivers are assumed to be not-at-fault. We judgmentally tempered this figure by 10% to recognize possible slippage in either the 70% estimate or in the assumed one-dollar-for-one-dollar offset assumptions. See Actuarial Report, Section 5, Subsection 2 for additional discussion of the accident benefits offset.
- (16) Based on Osborne Inquiry findings (study performed by Eckler Partners Ltd.) that eliminating the collateral source rule will reduce past and future wage losses by 19% and 6%, respectively. The 3.0% figure is derived by applying the 19% and 6% to the estimated percentage of the OMPP bodily injury loss cost attributed to past wage loss (6%) and future wage loss (26%):
 $.19 \times .06 + .06 \times .26 = 3\%$ (rounded).
- (17) $(1) \times (5) \times (1 - (8)) \times (10) / (9) \times (1 - (16)) + (8) \times (1)$
- (18) $(4) \times (6) \times (1 - (8)) \times (11) / (9) \times (1 - (16)) + (8) \times (4) + (2) - (4)$
- (19) $(3) \times (7) \times (1 - (8)) \times (12) / (9) \times (1 - (16)) + (8) \times (3)$
- (20) $(15) \times ((17) + (18) - ((2) - (4)) + (19)) / ((1) + (4) + (3)) \times ((14) - (13))$
- (21) $(17) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (22) $((18) - ((2) - (4))) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (23) $(19) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (24) $(17) - (21)$
- (25) $(18) - (22)$
- (26) $(19) - (23)$

Technical Appendix
Calculation of Estimated Bodily Injury Loss Cost Under TRA

Appendix 5
Exhibit 3
Page 1 of 3

(1) Bodily injury liability adjusted baseline cost	\$342.39
(2) Bodily injury liability loss penetration level	28.4%
(3) Percentage of losses attributed to out-of-province accidents	2.0%
(4) Bodily injury liability discount factor under Pre-OMPP product	0.727
(5) Bodily injury liability discount factor under TRA product	0.690
(6) Estimated bodily injury loss cost under TRA	\$97.29

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) This figure represents the estimated percentage of bodily injury liability losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (3) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (4) From Appendix 2, Exhibit 2.
- (5) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, bodily injury liability claims under TRA will take approximately 8 months longer to settle than bodily injury liability claims under Pre-OMPP. The average discount factor under TRA is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (6) $(1) \times (2) \times (1 - (3)) \times (5) / (4) + (1) \times (3)$

Technical Appendix
Calculation of Estimated Uninsured Motorist Loss Cost Under TRA

Appendix 5
Exhibit 3
Page 2 of 3

(1) Uninsured motorist adjusted baseline cost	\$28.37
(2) Portion of uninsured motorist baseline loss cost attributed to bodily injury liability	\$24.72
(3) Uninsured motorist - bodily injury loss penetration level	28.4%
(4) Percentage of losses attributed to out-of-province accidents	2.0%
(5) Uninsured motorist discount factor under Pre-OMPP product	0.727
(6) Uninsured motorist discount factor under TRA product	0.690
(7) Estimated uninsured motorist loss cost under TRA	\$10.67

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) Based on a review of insurance company rate filings, 90% of uninsured motorist losses are assumed to be related to bodily injury liability. The 90-10 split was applied prior to the application of ULAE, GST, and discount factors in deriving the uninsured motorist - bodily injury adjusted baseline loss cost.
- (3) This figure represents the estimated percentage of uninsured motorist losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (4) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (5) From Appendix 2, Exhibit 2.
- (6) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, uninsured motorist liability claims under TRA will take approximately 8 months longer to settle than uninsured motorist claims under Pre-OMPP. The average discount factor under TRA is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (7) $(2) \times (3) \times (1 - (4)) \times (6) / (5) + (2) \times (4) + (1) - (2)$

Technical Appendix
Calculation of Estimated Underinsured Motorist Loss Cost Under TRA

Appendix 5
Exhibit 3
Page 3 of 3

(1) Underinsured motorist baseline cost	\$2.95
(2) Underinsured motorist loss penetration level	17.6%
(3) Percentage of losses attributed to out-of-province accidents	2.0%
(4) Estimated underinsured motorist loss cost under TRA	\$0.57

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) This figure represents the estimated percentage of underinsured motorist losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (3) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (4) $(1) \times (2) \times (1 - (3)) + (1) \times (3)$

APPENDIX 6

In the text and the accompanying exhibits of this technical appendix, we proceed through a step-by-step discussion of the procedure by which we estimate the relative costs of income benefits under Pre-OMPP, OMPP and TRA. It is suggested that the more general discussion of the income benefits costings found in Section 5 of the main body of this report be read first, to provide the reader with an overview of the process.

The results of the relative income benefits costings are summarized in Exhibit 1. The major elements of the costing are:

- Population by category (Column (2))
- Relative accident frequency by category (Column (3))
- Claim frequency adjustment for utilization (Column (4))
- Present value of total income benefits cost by category and plan (Columns (5), (6) and (7)).

In the following narrative we discuss the estimation of each element in detail.

Population by category

The distribution of the Ontario population into the various wage earner and non-wage earner categories is determined from two main sources: 1) The 1986 Ontario Census and 2) "Labour Force," Statistics Canada, November 1990. From the 1986 Ontario Census breakdown of males and females by age, we determine the percentage of the total Ontario population that is pre-school, elementary school, secondary school, and post-secondary school (for post-secondary, we assume 50% of the appropriate age group begin post-secondary education).

The 1986 Ontario Census also contains information regarding the number of families in Ontario. There are three categories of families: husband and wife only, husband and wife with children, and single parents. For each category, the total number of families is further distributed by the

number of children per family. From the Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario, Number 1, Figures 7 and 8, we are provided with the Labour Force Participation of Parents with Children under Age 18 Living at Home, Ontario 1985. This summary exhibit provided by the Directorate displays the percentage of two parent families with the husband and wife both in the labour force, husband only in the labour force, wife only in the labour force, and neither husband nor wife in the labour force. Similarly, this exhibit shows the percentage of single parent families with the lone mother or father in the labour force and the percentage with the lone mother or father not in the labour force.

By applying the percentages shown in the Labour Force Participation exhibit to the Ontario distribution of two parent and single parent families, we determine the number of caregivers in Ontario. We divide the number of caregivers by the total Ontario population (as shown in the 1986 Ontario Census) to estimate the percentage of the Ontario population that is caregivers.

In order to estimate the "all other" portion of the Ontario population, we define this category as long-term unemployed who are not caregivers. We estimate the "all other" percentage by assuming that in 10% of the husband and wife families without children, only one spouse was in the labour force. The spouses which are not in the labour force (10% of the husband and wife families without children) are considered to be "all other."

We estimate the percentage of the Ontario population that is employed, unemployed, or retired from "Labour Force," Statistics Canada, November 1990. The November 1990 Labour Force report shows the distribution by age for people who were employed, unemployed, or not in the labour force in Ontario. (We consider those people not in the labour force who are over 65 to be retired.) By dividing by the total Ontario population from the 1986 Census we calculate the employed, unemployed, and retired percentages.

The total population obtained by summing the individual percentages is 103.1%, not 100%. This occurs since there is some overlap in the various categories. For example, an individual may be in school and also be employed.

Child Care Categories

There are two additional categories of income benefits: dependant care benefits payable to wage earners and dependant care benefits payable to non-wage earners. For the dependant care benefits payable to disabled wage earners, we use the percentage of the Ontario population that is employed. Similarly, we use the primary caregiver percentage for the non-wage earner dependant care benefit.

Relative Accident Frequency by Category

To estimate the relative accident frequency by category, we use automobile accident statistics for Ontario by age from the 1987 Ontario Road Safety Annual Report. Because auto accident data are not available for the benefit categories of employed, unemployed, students, etc., we make certain assumptions regarding the relationship of the benefit categories to the age categories available in the Road Safety data. While certain assumptions are obviously not exact representations of reality (for example, we assume all those over 65 are retired when we know that some people over 65 continue to work), we believe that the set of assumptions in their entirety provide a reasonable framework within which to produce our estimated relative costings. Those assumptions include:

- Those in the categories employed, unemployed, caregiver and "all other" have equal accident frequencies.
- 0 - 4 year olds and half of five year olds are pre-school.

- One half of five year olds, all children aged 6 through 13 and one half of 14 year olds are in elementary school.
- One half of 14 year olds, all 15 year olds, 90% of 16 and 17 year olds and 15% of 18 year olds are in secondary school. (The proportions account for drop outs and those graduating before reaching age 18.)
- 45% of 18 year olds, 50% of 19 year olds, 45% of 20 year olds and 36% of 21 year olds are in post-secondary school.
- All those age 65 or more are retired.

The above assumptions provide the framework which enable us to translate the accident statistics by age into accident relativities for the income benefits categories. The derivations and frequency selections are shown in Exhibit 2. Selected frequencies are as follows:

Employed	1.00
Unemployed	1.00
Pre-school	0.25
Elementary school	0.45
Secondary school	1.00
Post-secondary school	1.70
Caregivers	1.00
All other	1.00
Retired	0.40

Relative Claim Frequency by Category

Since the frequency of accidents is not expected to be affected by changes in the insurance coverages, the relative frequencies above should be equally applicable to Pre-OMPP, OMPP and TRA. However it is likely that the claim frequency could differ among the three systems (claim frequency can differ from accident frequency in that not all accident victims will seek reparations). Pre-OMPP income benefits are primarily payable to employed people. We therefore considered the possibility that the significantly greater level of benefits for employed people under OMPP and under TRA could affect the frequency of claims in the employed category. Benefits under each of the three plans are based on the level of the claimant's wages and are secondary (except in the first two weeks of income benefits under Pre-OMPP) to both private and CPP disability plans. However, the maximum benefits payable under OMPP and TRA are significantly greater than under Pre-OMPP. In addition, benefits are subject to minimums under OMPP and TRA, but not under Pre-OMPP. The following minimums and maximums apply:

	<u>Minimum</u>	<u>Maximum</u>
Pre-OMPP	None	\$ 140
OMPP	\$185	\$ 600
TRA	\$185	\$1,000

In consideration of the significant differences in benefit levels between Pre-OMPP and the other two plans, we select a claim frequency for the employed category under OMPP and TRA of 1.10, relative to the claim frequency for the employed category under Pre-OMPP of 1.00. All other claim frequencies for all three plans are set equal to the accident frequencies listed above.

Present Value of Total Income Benefits Costs

Columns (5), (6) and (7) of Exhibit 1 display the estimated present values of income benefits by category and plan. We discuss the derivation of each value in the following narrative.

The derivations all proceed along similar lines, in two steps. In step one, we estimate the average weekly amounts payable. In step two, we estimate the average present value costs of the string of weekly payments over the duration of payment. We begin the discussion with step one for wage earners under Pre-OMPP.

Estimated Weekly Income Benefits for Wage Earners - Pre-OMPP

Payments to disabled employed people under Pre-OMPP are based on 80% of gross weekly wages, subject to a maximum weekly benefit of \$140. In order to calculate the average weekly benefit for employed people in Ontario, we first create a table of wages by amount. For each gross average wage level, the wage table shows the portion of the Ontario population earning those average wages (see Exhibit 3, Columns (1) and (2)). Since the wage data available to us is for 1989, we trend the average gross wages in Column (1) to 1993 levels using a wage inflation rate of 4.5% (equal to the assumed annual rate of change of wages in Ontario (Column (3))). We calculate the average 1993 gross weekly wage (Column (4)) and then derive the resulting weekly benefit (Column (6)). By weighting the weekly benefits by the distribution of gross average wages (Column (2)), we estimate the average weekly benefit of \$124.54 payable under Pre-OMPP, before any offsets.

The \$124.54 weekly benefit represents the average benefit payable before consideration of benefits available under private income benefits plans or the Canadian Pension Plan (CPP). Pre-OMPP benefits are payable in the first two weeks of disability without reduction for any other available benefits. After the first two weeks, Pre-OMPP benefits become secondary to private income benefits plans and to CPP. In addition, CPP disability benefits are payable beginning in the fourth month of disability. Therefore, in addition to the average weekly income benefits payments of \$124.54, two other average weekly payments are calculated: an average weekly payment including an offset for private plans only which is payable in weeks three through 17; and a weekly benefit including offsets for both private and CPP disability plans, payable after week 17.

In the calculation of the weekly average Pre-OMPP income benefits payments to wage earners in which private plan benefits are payable, we make the following assumptions:

- Those earning less than \$8,000 per year are employed part-time, those earning more than \$8,000 are employed full-time.
- On average, the private plan benefit is 70% of gross wages.
- 60% of disabled full-time wage earners receive benefits under a private plan. Part-time wage earners are assumed not to be covered by private plans.

Under these assumptions, the estimated average weekly benefit after consideration of private plan benefits is \$89.39 (Column (7)).

In the calculation of Pre-OMPP benefits with offsets for private and CPP plans, we make the following additional assumptions:

- One half of those disabled longer than four months are sufficiently seriously disabled to qualify for CPP disability benefits.
- The CPP disability benefit is composed of two pieces: 75% of the CPP pension benefit plus a constant payment of \$69.94 per week. The CPP pension benefit is based on 25% of the average gross weekly wages in the most recent three complete years, subject to maximum gross wages of \$585 per week.
- 25% of the average gross weekly wages in the most recent three complete years is approximately equivalent to 20% of wages at the 1993 level.

- Private income benefits plan payments are themselves reduced for payments under CPP disability.

The average weekly benefit, including offsets for private income benefits and CPP disability plans, is estimated in Exhibit 3 at \$82.63 (Column (8)).

Estimated Weekly Income Benefits for Wage Earners - OMPP

Under OMPP the weekly benefit to a disabled wage earner is based on 80% of gross weekly wages, subject to minimum gross weekly wages of \$232 (equivalent to a minimum benefit of \$185 excluding offsets) and to a maximum benefit payment of \$600. In order to calculate the average weekly OMPP benefits, we use the same wage distribution table and the same basic procedure that we use to calculate the Pre-OMPP benefits. Calculations are displayed in Exhibit 5. The estimated average weekly benefit under OMPP, before consideration of any other available benefits, is \$398.31 (Column (6)).

As under the Pre-OMPP plan, if a disabled person is also covered by a private plan and/or qualifies for CPP disability benefits, the private plan benefit and CPP are primary to the OMPP benefit. Employing the same assumptions as previously listed, we derive an estimated average weekly OMPP benefit with an offset for private income benefits payments of \$217.14 (Column (7)). The corresponding figure including offsets for both private and CPP disability payments is \$194.10 (Column (8)).

Estimated Weekly Income Benefits for Wage Earners - TRA

Note on TRA costing and nomenclature: In estimating the TRA weekly income benefits for both wage earners and non-wage earners, we estimate the cost of benefits as defined in the draft TRA regulation produced by the OAIR. However, we present that costing here by claimant category, rather than by benefit category as defined in the draft regulation. For example, disabled secondary school students may receive (as defined in

the regulation) yearly and weekly education disability benefits, "other disability benefits," and loss of earning capacity benefits. We included all these categories of benefits in costing the secondary school student category. However, in the text, we do not attempt to recognize each benefit explicitly.

Under TRA the weekly benefit to a disabled wage earner (Income Replacement Benefits or "IRB") is based on 90% of net weekly wages (net of federal and provincial income taxes, CPP contributions and unemployment insurance premiums (UI)), subject to a maximum benefit payment of \$1,000. The IRB is payable for 104 weeks after the onset of the disability. After 104 weeks, the IRB is replaced by a weekly loss of earning capacity benefit. This benefit is calculated by reducing the IRB for income that the insurer believes the person could earn in an occupation or employment, as determined by an assessment panel. The disability table used in the income benefits costings for TRA reflects this change in benefit at 104 weeks. (For simplicity, we use the term "Income Replacement Benefits" (IRB) for all wage earner and non-wage earner categories to refer to either the loss of earning capacity benefits or the income replacement benefits.)

In order to calculate the average weekly TRA benefit in Ontario, we use the same wage distribution table which we use to calculate the Pre-OMPP and OMPP average benefits. However, since the TRA benefit is based on net income, not gross income, we add the calculation of net income to the procedure. The calculation of average weekly benefits is displayed in Exhibit 8, page 1. Column (4) contains estimated 1993 gross weekly wages; Column (5) contains average net wages.

The derivation of net wages from gross wages is provided in detail in Exhibit 8, page 2. Details are provided in the following paragraphs.

In calculating net income, we assume that taxable income averages 70% of gross income. (The 70% figure was selected after an analysis of allowable deductions in the Canadian federal income tax system and consideration of population statistics regarding average numbers of dependants.)

The Basic Federal Tax (Column (13)) is calculated as follows:

<u>Portion of Annual Taxable Income</u>	<u>Federal Tax Rate</u>
between \$0 and \$28,275	17%
between \$28,275 and \$56,550	26%
over \$56,550	29%

The provincial tax in Ontario (Column (14)) is based on 53% of the Basic Federal Tax. In addition, there is a provincial surtax which is equal to 10% of the portion of provincial tax which is in excess of \$10,000 (Column (15)). The federal surtax includes 5% of the Basic Federal Tax and 3% of the portion of Basic Federal Tax which is in excess of \$15,000 (Column (16)).

The final deductions from gross income are the Unemployment Insurance (UI) tax (Column (17)) and CPP taxes (Column (18)). The UI tax is 2.5% of gross income, subject to a maximum gross income of \$33,280. The CPP tax is 2.2% of gross income, subject to a maximum gross income of \$26,100.

Gross income minus the Basic Federal Tax, provincial tax, provincial surtax, federal surtax, UI tax and CPP tax equals net income (Column (20)).

Net income is carried forward to Column (5) of the first page of the exhibit, where it is used to estimate the income benefit amount payable under TRA for each income range and offset combination (Columns (7) through (10)).

Unlike the other plans, TRA treats part-time workers separately from full-time workers. In TRA, part-time workers receive benefits based on actual wages for the first six months of income benefits. After six months, benefits are based on wages assuming full-time employment. Therefore, estimated benefits must be calculated separately for full-time and part-time workers.

Part-time and full-time estimated average weekly benefits are displayed at the bottom of Column (8) including an offset for private plans only, and at the bottom of Column (9) for private and CPP offsets. (The first three wage amount ranges are assumed to be part-time workers, the rest are assumed to be full-time.) Results are as follows:

	<u>Part-time</u>	<u>Full-time</u>
Private offset	\$185.00	\$212.34
Private & CPP offsets	\$144.72	\$185.52

Estimated Present Value Total Cost of Income Benefits for Wage Earners

Pre-OMPP, OMPP and TRA

The average weekly benefit levels calculated from the wage distribution tables for Pre-OMPP, OMPP, and TRA are used to estimate the present value of the average total benefits per claim over the life of the claim. The calculations are displayed in Exhibits 4, 6 and 9 for Pre-OMPP, OMPP and TRA, respectively. We describe the calculations as displayed in Exhibit 4 (Pre-OMPP).

Column (1) of the exhibit displays a time measure in days, then weeks, then months, and finally in years. Column (2) converts the time measure from Column (1) into the equivalent value in years. Column (3) is the disability duration table. With the number of people disabled at eight days set equal to 1,000,000, Column (3) displays the number disabled at each point in time. In Column (4) is displayed the present value factors based on an 8.5% interest rate. Column (5) contains the weekly benefit values derived above. The initial entry in the Column is \$17.79,

which is the daily equivalent of the initial weekly benefit (\$124.54/7). As one proceeds down Column (5), at day 15 the benefit changes to \$12.77, which is the daily equivalent of the weekly benefit with private plan offset of \$89.39. As one continues further down the page, the time measure (Column (1)) changes from days to weeks and the benefit amount in Column (5) changes from the daily benefit to the corresponding weekly benefit of \$89.39. At 17.5 weeks, CPP disability benefits begin to be paid to those who qualify, and the benefit amount changes to the weekly benefit reduced for both private and CPP benefits (\$82.63). This weekly amount continues to be paid to those remaining disabled until year 28.5, at which time the average disabled worker is assumed to reach the retirement age of 65. At that time both private and CPP disability payments cease and the OMPP benefit increases to the amount estimated to be paid with no offsets (the Column (5) value for years 28.5 and higher of \$6,476 is equal to 52 times the weekly estimated benefit amount without offsets of \$124.54).

The benefit amounts in Column (5) are multiplied by the number of people remaining disabled at each time point (Column (3)) and by the present value factor (Column (4)) to produce an estimated present value total payout at each time point (Column (6)). These values are summed and the total is divided by the base number disabled (1,000,000) to produce an estimated present value average total payout per disabled wage earner of \$2,512.

The calculations of the present value estimates of the average total cost of income benefits for wage earners under OMPP and TRA proceed along the same lines as those described above for OMPP. The following additional comments apply.

OMPP

- A one week waiting period applies.
- All payments are offset for both private and CPP benefits.

TRA

- A one week waiting period applies.
- All payments are offset for both private and CPP benefits.
- Part-time and full-time workers' benefits are calculated separately.
- After 6 months, part-time workers receive full-time equivalent benefits.
- TRA benefits are indexed to inflation such that the total benefits from all sources, including private and CPP payments, increase annually by the CPI (assumed to be 4.5% per year). Private plans are assumed not to be indexed. Therefore, TRA benefits must increase more than the assumed CPI does so that total benefits from all sources will keep pace with the CPI. We estimate that TRA benefits must increase by 7% per year during the period in which private plan benefits are payable (the procedure by which the 7% rate was selected is documented below).
- After year 27.5 the average worker is assumed to reach retirement age, at which time the Income Replacement Benefit (IRB) is replaced by the Income Supplement (IS). The IS equals 2% of the IRB for every year of income benefits. Since the average worker is assumed to have received benefits for 26.5 years, the IS equals 53% of the IRB. The IS is indexed at 4.5% per year.

Documentation of the selected 7% index under TRA

Income replacement benefits under TRA are indexed annually at a rate which is sufficient to keep total benefits, including those from private plans, even with inflation. Private plans are assumed not to be indexed. Therefore, TRA benefits must increase at an annual rate in excess of 4.5% to keep the total of all income benefits equal to the assumed change in the Consumer Price Index (CPI) of 4.5%. The following example demonstrates the effect.

	<u>Total Income Benefit</u>	<u>Amount Paid by Private Plan</u>	<u>Amount Paid by Road Ahead</u>
Year 1	\$1,000	\$500	\$500
Year 2	\$1,045	\$500	\$545
Index	4.5%	0.0%	9.0%

Since not all disabled wage earners receive private plan benefits, the appropriate index is in the range from 4.5% to 9.0%, in this example.

Exhibit 12 displays the calculations which underlie the selection of the 7% index. The gross average wage of \$614 (top of Column (1)) and the average TRA benefit including private plan and CPP disability offsets of \$178 (Column (2)) in Year 1 are calculated in Exhibit 8. The amounts in Columns (1) and (2) for years 2 through 30 are calculated in a similar manner, but with gross wages trended one additional year to produce the year 2 values, two additional years to produce the year 3 values, etc. For each year of the 30 year period, Column (5) shows the constant percentage increase in the initial TRA benefit of \$178 which produces the average TRA benefit in that year. The percentages in Column (5) are weighted to produce an average of 6.9%. The weights reflect the relative impact of the values in Column (5) on the total present value cost based on a discount rate of 8.5%. We selected the rounded rate of 7%.

Estimated Present Value Total Cost of Income Benefits for Non-wage Earners

Pre-OMPP

Under Pre-OMPP, income benefits are payable to two categories of non-wage earners: those currently unemployed who have held employment in at least 6 of the last 12 months, and primary unpaid housekeepers. Those disabled people who are currently unemployed, yet have been employed for at least 6 of the last 12 months, receive weekly benefits under Pre-OMPP as if they were currently employed. For purposes of this calculation, we assume that one half the unemployed category qualify for benefits under Pre-OMPP.

The calculation of the average weekly benefits payable to a disabled wage earner is discussed above and is displayed in Exhibit 3. Values are carried to Exhibit 4 where the estimated present value total cost for wage earners under Pre-OMPP of \$2,512 is calculated.

Since one half of those in the unemployed category qualify, the average benefit equals \$1,256 ($\$2,512 \times 0.5$). This value appears in Exhibit 4, page 4 and is carried forward to Exhibit 1, Column (5).

The final category of non-wage earners which receives benefits under Pre-OMPP is primary unpaid housekeepers, who receive \$70 per week for a maximum of 12 weeks. The estimated total benefit is calculated in Exhibit 4, with the result (\$559) displayed on page 4. This value is carried forward to Exhibit 1, Column (5).

Estimated Present Value Total Cost of Income Benefits for Non-wage Earners

OMPP

Under OMPP, a non-wage earner weekly income benefit of \$185 is payable to everyone age 16 or older. Therefore, the following categories of claimant, as displayed in Exhibit 1, receive benefits with the following assumed average ages:

	<u>Assumed Average Age</u>
• Unemployed	37
• Pre-school students	3
• Elementary school students	9
• Secondary school students	15
• Post-secondary school students	20
• Caregivers	37
• All Other	37
• Retired	72

Pre-school and elementary school students and secondary school students who are under 16 begin to receive income benefits payments under OMPP when they have reached age 16, provided they are still disabled at that time. All other categories begin receiving benefits after a one week waiting period. Benefits are not indexed.

The calculations of the present values of the estimated average total cost of income benefits for each category are displayed in Exhibit 7. In deriving these average total costs, we use a constant benefit amount of \$185 per week and the same procedure that was used to estimate the wage earner costs. The results are displayed on page 5 of the exhibit and are reproduced below:

	Average Total <u>Cost</u>
• Unemployed	\$5,161
• Pre-school students	\$ 609
• Elementary school students	\$1,152
• Secondary school students	\$2,314
• Post-secondary school students	\$5,161
• Caregivers	\$5,161
• All Other	\$5,161
• Retired	\$4,483

If the primary caregiver of a dependant is disabled, an additional dependant care benefit of \$50 per week per dependant is payable, with a weekly maximum of \$200. An estimated total present value benefit of \$2,172 is displayed on line (15) and assumes an average benefit is payable for nine years with 1.9 children per caregiver.

All the OMPP non-wage earner estimated total income benefits costs are carried forward from Exhibit 7, page 5 to Exhibit 1, Column (6).

Estimated Present Value Total Cost of Income Benefits for Non-wage Earners

TRA

Non-wage earners eligible to receive income benefits under TRA include all non-wage earner categories and two categories of recipients of dependant care benefits: non-wage earner dependant care recipients and wage earner dependant care recipients.

Income benefits for students, persons unemployed less than 3 years, primary caregivers, and both dependant care categories are indexed to the CPI. We discuss each of the benefits in turn, starting with the student benefits.

As under OMPP, there are four categories of students for which the average total income benefits cost are calculated: 1) pre-school students; 2) elementary school students; 3) secondary school students; and 4) post-secondary school students. Lost school benefits (labelled Yearly Education Disability Benefits in the draft regulation) consist of \$2,000 for each year of elementary school and \$4,000 for each year of secondary school that is lost due to the accident. Post-secondary school students receive \$4,000 per lost semester, up to a maximum of two semesters.

Students who are under age 16 when they become disabled receive the lost school benefits until age 16. At age 16, they begin to receive a weekly benefit (Weekly Education Disability Benefits) of \$185. At age 18, the weekly benefit increases according to the following schedule:

<u>Age Range (Years)</u>	<u>Benefit</u>
18 or over but under 20	60% of the average net weekly wage
20 or over but under 22	65% of the average net weekly wage
22 or over but under 24	70% of the average net weekly wage
24 or over but under 26	75% of the average net weekly wage
26 or over but under 28	80% of the average net weekly wage
28 or over but under 30	85% of the average net weekly wage
30 or over	90% of the average net weekly wage

The benefit at age 30 is equal to the IRB. The IRB is then received from age 30 through age 65, at which time it is replaced by the IS. The IRB for students is calculated as 90% of net average wages, subject to a minimum of \$185 and a maximum of \$1,000 per week. The IS is equal to 2% of the IRB for each year of IRB to a maximum of 35 years.

Secondary school students who are over 16 when they are disabled receive lost school benefits to a presumed graduation date, at which time they receive the weekly benefit described above, which increases such that it is equal to the IRB at age 30. The IRB is then received from age 30 through age 65, at which time they receive the IS.

Post-secondary school students receive the lost school benefits up to a maximum of two semesters. After a one week waiting period, they also receive the weekly benefit described above, which increases to equal the IRB at age 30. The IRB is then received from age 30 through age 65, at which time they receive the IS.

The estimated present value total income benefits costs for the student categories are calculated in Exhibit 10, pages 1 through 5. Results are displayed on page 5 and carried forward to Exhibit 1, Column (7).

The IRB payable to a person in the unemployed category under TRA depends on the length of time that person has been unemployed. As such, there are two groups:

Short-term unemployed (less than 6 months), and
Medium-term unemployed (between 6 months and 3 years)¹.

¹ Those unemployed more than 3 years appear in other categories.

Short-term unemployed are treated as wage earners for purposes of calculating an appropriate income benefit under TRA. They receive the IRB, based on 90% of net wages from prior employment, subject to a minimum total benefit of \$185 and a maximum benefit of \$1,000 per week. The IRB is estimated to be \$425.11 (Exhibit 8, Column (7)) which applies to the first 4 months of income benefits. Since TRA benefits are secondary to CPP disability benefits, the benefit is offset for CPP payments after 4 months, thus reducing the short-term unemployed TRA IRB to \$362.89 (Column (10)). At age 65, the IRB is replaced by the IS.

Medium-term unemployed receive \$185 per week for the first 6 months of income benefits. After 6 months, they receive the IRB offset for CPP disability payments (\$362.89). At age 65, the IRB is replaced by the IS.

The present value of the total income benefits costs for short-term and medium-term unemployed is calculated in a manner similar to that discussed above. The estimated present value average total income benefits costs of \$12,869 and \$10,479 for short-term and medium-term unemployed, respectively, are displayed in Exhibit 10, page 9. The average income benefits cost for the unemployed category of \$12,272, page 9, line 15, is calculated by assuming that 75% of unemployed people are short-term unemployed, and 25% are medium-term.

Under TRA, retired people who are disabled receive \$185 per week, not indexed (Other Disability Benefits in the regulation). The derivation of the total cost of income benefits for retired people of \$4,376 is displayed in Exhibit 10, pages 6 through 9. The result is carried forward to Exhibit 1, Column (7)².

² Although the disability tables used in all the costings have a general mortality built in, it significantly understates the mortality that can be expected in the retired category. Therefore, since the average life expectancy of those over 65 is approximately 12 years, we truncate the disability costing calculation after year 11.5.

The income benefits payable to an unemployed primary caregiver under TRA depends upon the length of time the person has been unemployed. As such, there are two categories of unemployed caregivers:

- Temporarily unemployed (less than 3 years)
- Long-term unemployed (more than 3 years)

Temporarily unemployed primary caregivers receive \$185 per week for the first 6 months of income benefits (Other Disability Benefits). After 6 months, they have the option of choosing either an IRB based on their prior employment or the dependant care benefit for non-wage earners (Caregiver Benefits).

The dependant care benefit for non-wage earners is payable weekly at \$250 for the first dependant and \$50 for each additional dependant. We estimate that the average dependant care benefit per disabled caregiver is \$296.64 (Exhibit 11, page 3).

The IRB, offset for CPP disability benefits (Exhibit 8, Column (10)), applies to temporarily unemployed primary caregivers. Inspection of Column (10) shows that those in the first nine income ranges have an IRB less than the dependant care benefit of \$296.64. Therefore, after six months, those caregivers would receive a benefit of \$0 (because they would choose the dependant care benefit instead), thereby reducing the applicable average IRB from \$362.89 to \$255.77.

We have assumed that the dependant care benefit, if applicable, will be paid for an average of 9 years from the time of the accident. Thus, after 9 years, all temporarily unemployed primary caregivers receive the IRB of \$362.89. At age 65, the IRB is replaced by the IS, equal to 2% of the IRB for each year of the IRB to a maximum of 35 years.

The present value of the total average income benefits payments for temporarily unemployed primary caregivers is calculated in the same manner in which the other total income benefits costs are estimated. The average total income benefits cost of \$9,074 is displayed in Exhibit 10, page 13.

Long-term primary caregivers receive \$185 per week for the entire duration of the benefit (Other Disability Benefits). Since income benefits payable to unemployed people who have been outside the labour force for more than 3 years are not indexed under TRA, the present value of the average income benefits payment for long-term caregivers is calculated using Column (10) of Exhibit 10. The average total income benefits cost for long-term primary caregivers of \$5,053 is displayed in Exhibit 10, page 9.

The total primary caregiver average income benefits cost of \$7,064 (Exhibit 10, page 13) is calculated by assuming that 50% of primary caregivers are temporary, while the remaining 50% are long-term. Values are carried forward to Exhibit 1, Column (7).

There are two categories of dependant care benefits: those payable to disabled wage earners (Compensation for Other Pecuniary Losses) and those payable to disabled non-wage earners (Caregiver Benefits). For disabled wage earners, the dependant care benefit consists of reimbursement for incurred dependant care expenses up to the following per week maximums:

<u>Number of Dependants</u>	<u>Maximum Benefit per Week</u>
1	\$ 75
2	\$100
3	\$125
4 or more	\$150

In Exhibit 11, page 1 we have estimated the average dependant care benefit per disabled wage earner of \$23.78. We recognize that benefit maximums are based on the number of dependants, and that some benefits may be payable until the youngest child reaches age 16. However, to simplify the calculations, we have assumed that the average dependant care benefit will be paid, on average, for 9 years from the time of the accident. The present value total cost of the dependant care benefit is estimated in the same manner in which the other indexed TRA total income benefits costs are estimated. The average total income benefits cost of \$563 is displayed in Exhibit 10, page 13, and is carried forward to Exhibit 1, Column (7).

Disabled non-wage earner primary caregivers receive weekly benefits of \$250 for the first dependant, and \$50 for each additional dependant during the first 6 months of income benefits. We estimate that the average weekly dependant care benefit per disabled caregiver is \$296.64 (Exhibit 11, page 3).

After 6 months, the disabled long-term unemployed caregiver continues to receive the dependant care benefit. However, as discussed above, the temporarily unemployed primary caregiver has the option of receiving the IRB instead. From inspection of Exhibit 8, we estimate that 57.8% of the temporarily unemployed primary caregivers will choose the dependant care benefit of \$296.64. The remaining 42.2% will receive a benefit of \$0.00.

<u>Temporarily Unemployed Primary Caregivers</u>	<u>Dependant Care Benefit</u>	<u>Weights</u>
Choose Dep. Care Benefits	\$296.64	57.8%
Choose IRB	<u>\$ 0.00</u>	<u>42.2%</u>
	\$171.45	100.0%

Thus, the weighted average temporarily unemployed primary caregiver dependant care benefit cost is \$171.45. If we assume that 50% of all primary caregivers are temporarily unemployed, and 50% are long-term unemployed, the average dependant care benefit per disabled primary caregiver is \$234.05:

<u>Primary Caregiver Benefit</u>	<u>Dependant Care Benefit</u>	<u>Weights</u>
Long-term	\$296.64	50%
Temporary	<u>\$171.45</u>	<u>50%</u>
	\$234.05	100%

The present value of the average dependant care benefit per caregiver is calculated in the same manner as the other TRA total income benefits costs. The average total income benefits cost of \$6,204 is displayed in Exhibit 10, page 13, and carried forward to Exhibit 1, Column (7).

Under TRA, the "All other" category receives income benefits equivalent to those received by long-term unemployed persons. Thus, for the "All other" category, the present value of the average total benefit per disabled person is \$5,053 (Exhibit 13, page 9).

Relative Income Benefits Loss Costs

In the previous sections we discussed the methods by which we estimate the population by category; the relative accident frequency by category; and the claim frequency adjustment for utilization and various present value total income benefits costs by benefit category and plan. In Exhibit 1, these values are combined to produce the relative income benefits loss costs for each plan.

In Row A of Exhibit 1, the relative total costs of an average income benefit are estimated for Pre-OMPP, OMPP and TRA (see the footnote for a description of the calculation). In Row B the adjustment ratios for OMPP and TRA are calculated. The ratios are then applied to the Pre-OMPP Baseline Income Benefits Loss Costs (Row C) to produce the Relative Income Benefits Loss Costs (Row D).

Sensitivity Analysis - Disability Duration Table

In the income benefits costings, two disability duration tables are used. The first, provided by the RAAQ, has an adjustment at two years for the change in eligibility for income benefits under Quebec law. This table is used without modification for the original costings for Pre-OMPP and TRA, both of which have similar eligibility changes at two years. A modified table which reflects a change in eligibility at three years instead of at two years is used to cost OMPP. Except for the one year difference in the time of the eligibility adjustment, the two tables are identical.

We test the sensitivity of the results of the income benefits costing to the assumed length of disability by modifying (both up and down) the entries in each of the two disability duration tables. We do this by increasing by 50%, and decreasing by 50%, the number of disabled people that cease receiving income benefits as a result of the change in eligibility requirements. Entries in the tables are converted to "percentage remaining disabled" to illustrate the modification used in the sensitivity analysis.

Years Since Accident	Percentage Remaining Disabled					
	Two Year Adjustment Table (Pre-OMPP & TRA)			Three Year Adjustment (OMPP)		
	Base	Longer Duration	Shorter Duration	Base	Longer Duration	Shorter Duration
.5	19.1%	19.1%	19.1%	19.1%	19.1%	19.1%
1.0	8.3	8.3	8.3	8.3	8.3	8.3
1.5	5.7	5.7	5.7	5.7	5.7	5.7
2.0	3.2	4.0	3.2	4.7	4.7	4.7
2.5	2.8	3.5	2.1	4.2	4.2	4.2
3.0	2.6	3.3	2.0	2.6	3.2	2.0
3.5	2.5	3.2	1.9	2.5	3.1	2.0
5.0	2.3	2.9	1.7	2.3	2.8	1.8
Average Length of Disability	1.08 yrs	1.27 yrs	0.89 yrs	1.09 yrs	1.25 yrs	0.93 yrs

Because the base costings are performed on a relative basis, it is not clear whether increasing the average length of disability will increase or decrease relative costs for OMPP and TRA. For example, if increasing the average duration of disability has a greater effect on Pre-OMPP than OMPP, then the relative cost of OMPP will go down when the longer duration table is used. Results of the sensitivity analysis are as follows:

	Relative Loss Costs				
	Pre-OMPP	OMPP		TRA	
		Value	% Change	Value	% Change
Base	\$21.26	\$70.39	-	\$113.07	-
Longer Disability Duration	\$21.26	\$69.83	< 1%	\$119.74	+ 6%
Shorter Disability Duration	\$21.26	\$71.03	< 1%	\$107.61	- 5%

Results show that variation in the average length of disability has little impact on relative OMPP costs (a change of less than 1%), and has a greater effect on TRA costs. Longer disability duration increases the TRA estimated cost by 6% over the base cost; shorter duration decreases the estimated cost by 5%.

This result is not unexpected. TRA benefits are indexed to the CPI; Pre-OMPP and OMPP benefits are not. Therefore, income benefits for the long-term disabled are much greater after a few years under TRA than under Pre-OMPP and OMPP. For example, consider a disabled person who receives an initial income benefits payment of \$100. After ten years, his weekly payment under TRA will have risen to \$155, but will have remained at \$100 under Pre-OMPP and OMPP. And if he is receiving private plan benefits that are not indexed, there is an additional annual increase in TRA benefits to keep the total benefits even with inflation, which boosts the payment at 10 years to \$197 per week. Therefore, increasing the number of long-term disabled adds relative costs to TRA.

Sensitivity Analysis - Percentage of Full-Time Workers Receiving Private Plan Offsets

In the calculation of the average weekly benefit for wage earners under Pre-OMPP, OMPP and TRA, we assume that 60% of full-time workers receive offsets to their income benefits from private plans. We test the sensitivity of the results of the income benefits costing to this base assumption. We do this by decreasing to 40%, then increasing to 80%, the percentage of full-time workers receiving private offsets. The resulting average weekly benefits, including private offsets, are as follows:

Estimated Average Weekly Benefit for Wage Earners with Private Offsets

	<u>Pre-OMPP</u>	<u>OMPP</u>	<u>TRA</u>
Base (60% receive Private Offset)	\$ 89.39	\$217.14	\$212.34
40% Receive Private Offset	\$101.11	\$277.53	\$300.95
80% Receive Private Offset	\$ 77.67	\$156.75	\$123.73

Substituting the "40%" and "80%" average weekly benefits into the appropriate calculations produces the following relative income benefits loss costs:

	<u>Relative Loss Costs</u>				
	<u>Pre-OMPP</u>	<u>OMPP</u>		<u>TRA</u>	
		<u>Value</u>	<u>% Change</u>	<u>Value</u>	<u>% Change</u>
Base (60% receive Private Disability Benefits)	\$ 21.26	\$ 70.39	-	\$113.07	-
40% Receive Private Disability Benefits	\$ 21.26	\$ 75.06	+ 6.6%	\$120.18	+ 6.3%
80% Receive Private Disability Benefits	\$ 21.26	\$ 64.59	- 8.2%	\$101.32	-10.4%

Results show that variation in the percentage of full-time workers who receive private plan income benefits offsets has some effect on relative Pre-OMPP costs, and has a greater impact on both OMPP and TRA costs. This is not unexpected. Lowering the percentage that receive private plan offsets increases the averages of weekly income benefits. However, the average weekly benefit is subject to maximums of \$140, \$600, and \$1,000 under Pre-OMPP, OMPP, and TRA, respectively. As such, the effect of the increase in the average weekly benefits is

limited by the maximum benefit amount. Since the OMPP and TRA plan maximums are significantly higher than the Pre-OMPP maximum, the OMPP and TRA relative income benefits costs will increase more than the Pre-OMPP costs.

Technical Appendix
Relative Income Benefits Loss Costs

Appendix 6
Exhibit 1
Page 1 of 1

Income Benefits Category	Population By Category	Relative Accident Frequency By Category	Claim Frequency Adjustment for Utilization	Present Value of Total Income Benefits Costs		
				Pre-OMPP	OMPP	TRA
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Employed	51.6%	1.00	1.100	\$2,512	\$5,733	\$7,672
Unemployed	4.0%	1.00	1.000	1,256	5,161	12,272
Pre-School	6.9%	0.25	1.000	0	609	3,539
Elementary School	12.2%	0.45	1.000	0	1,152	5,441
Secondary School	5.9%	1.00	1.000	0	2,314	7,971
Post-Secondary School	3.3%	1.70	1.000	0	5,161	12,930
Caregivers	7.5%	1.00	1.000	559	5,161	7,064
All Other	1.0%	1.00	1.000	559	5,161	5,053
Retired	10.7%	0.40	1.000	0	4,483	4,376
Child Care-Caregivers	7.5%	1.00	1.000	0	2,172	6,204
Child Care-Employed	51.6%	1.00	1.000	0	0	563
(A) Totals				\$1,394	\$4,754	\$7,924
(B) Adjustment Ratios					3.410	5.685
(C) Pre-OMPP Baseline Income Benefits Loss Costs				\$21.26	\$20.64	\$19.89
(D) Relative Income Benefits Loss Costs				<u>\$21.26</u>	<u>\$70.39</u>	<u>\$113.07</u>

Notes:

- (2) Estimated from 1986 Ontario Census data and from "Statistics Canada," November 1990.
 (3) From Exhibit 2, line (11).
 (4) Assumed increases in utilization due to availability of higher benefit levels under OMPP and TRA.
 (5) From Exhibit 4, Page 4, lines (11) and (12).
 (6) From Exhibit 6, Page 4 and Exhibit 7, Page 5.
 (7) From Exhibit 9, Page 4 and Exhibit 10, Pages 5, 9, and 13.
 (A) $5(A) = \text{The sum of } (2) \times (3) \times (5).$
 $6(A) = \text{The sum of } (2) \times (3) \times (4) \times (6).$
 $7(A) = \text{The sum of } (2) \times (3) \times (4) \times (7).$
 (B) $6(B) = 6(A) / 5(A)$
 $7(B) = 7(A) / 5(A)$
 (C) Adjusted baseline loss costs from Actuarial Report, Section 5, Subsection 2.
 (D) $5(D) = 5(C).$
 $6(D) = 6(C) \times 6(B).$
 $7(D) = 7(C) \times 7(B).$

Technical Appendix
Accident Frequency Relativities

Appendix 6
Exhibit 2
Page 1 of 1

Number of People Injured in Ontario, by Age and Benefits Category

Age of Injured (1)	Total Injured (2)	Pre-Sch. (3)	Elem. (4)	Sec. (5)	Post-Sec. (6)	Adults (7)	Retired (8)
0-4	2,045	2,045					
5-15	9,358	425	7,657	1,276			
16	3,130			2,817		313	
17	3,941			3,547		394	
18	4,376			656	1,969	1,750	
19	4,454				2,227	2,227	
20	4,456				2,005	2,451	
21-24	17,425				1,936	15,489	
25-34	28,148					28,148	
35-44	18,013					18,013	
45-54	10,920					10,920	
55-64	7,779					7,779	
65-74	4,191						4,191
75+	1,831						1,831
Totals	120,067	2,470	7,657	8,296	8,138	87,484	6,022

Accident Frequency Relativity Calculation

	Pre-Sch.	Elem.	Sec.	Post-Sec.	Adults	Retired
(9) Population Distribution	6.9%	12.2%	5.9%	3.3%	61.0%	10.7%
(10) Frequency Relativity	0.25	0.44	0.98	1.72	1.00	0.39
(11) Selected Relative Frequency	0.25	0.45	1.00	1.70	1.00	0.40

Notes:

- (1)&(2) Number of injured by age is from 1987 Ontario Road Safety Annual Report.
- (7) Includes benefits categories employed, unemployed, caregivers, and "all other".
- (9) From Exhibit 1.
- (10) Relativity to employed: $\{[(1) / (2)] / [87,484 / 0.010]\}$.
- (11) Selected relativity.

Technical Appendix
Calculation of Pre-OMPP Weekly
Income Replacement Benefits

Appendix 6
Exhibit 3
Page 1 of 1

1989 Estimated Annual Income	Estimated Income Distribution	7/1/93 Estimated Annual Income	7/1/93 Estimated Weekly Income	Estimated CPP Disability Pension	Pre-OMPP Weekly Income Replacement Benefits		
					With No Offsets	Private Offset Only	Private And CPP Offsets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,789	\$34.40	\$75.10	\$27.52	\$27.52	\$13.76
3,200	5.8%	3,816	73.39	80.95	58.71	58.71	29.35
5,200	5.1%	6,201	119.25	87.83	95.40	95.40	51.49
7,200	4.7%	8,586	165.12	94.71	132.09	62.74	43.80
9,200	4.0%	10,971	210.98	101.59	140.00	68.66	54.10
11,200	3.9%	13,356	256.85	108.47	140.00	71.41	62.81
14,000	6.1%	16,695	321.06	118.10	140.00	75.26	75.01
18,000	9.7%	21,465	412.79	131.86	140.00	80.77	80.77
23,000	11.3%	27,428	527.46	149.06	140.00	87.65	87.65
28,000	9.3%	33,391	642.13	157.70	140.00	94.53	94.53
36,000	14.9%	42,931	825.59	157.70	140.00	105.54	105.54
47,458	5.2%	56,595	1,088.37	157.70	140.00	121.30	121.30
53,850	3.9%	64,217	1,234.93	157.70	140.00	130.10	130.10
60,185	2.7%	71,771	1,380.22	157.70	140.00	138.81	138.81
66,127	2.1%	78,858	1,516.50	157.70	140.00	140.00	140.00
73,864	2.0%	88,084	1,693.93	157.70	140.00	140.00	140.00
85,357	0.8%	101,790	1,957.50	157.70	140.00	140.00	140.00
98,980	0.4%	118,036	2,269.92	157.70	140.00	140.00	140.00
115,743	0.2%	138,026	2,654.35	157.70	140.00	140.00	140.00
126,956	0.1%	151,397	2,911.49	157.70	140.00	140.00	140.00
157,174	0.2%	187,433	3,604.48	157.70	140.00	140.00	140.00
202,361	0.1%	241,319	4,640.75	157.70	140.00	140.00	140.00
244,240	0.1%	291,261	5,601.17	157.70	140.00	140.00	140.00
319,757	0.0%	381,316	7,333.00	157.70	140.00	140.00	140.00
515,529	0.1%	614,778	11,822.66	157.70	140.00	140.00	140.00
\$26,776		\$31,931	\$614.06	\$130.72			
Estimated Weekly Average Income Benefits					\$124.54	\$89.39	\$82.63

Notes by Column:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with four years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) Calculated as 75% of the CPP retirement pension plus \$69.94.
- (6) 80% of column (4), subject to a maximum of \$140.
- (7) Column (6) reduced for benefits payable under private income benefits plans.
- (8) Column (6) reduced for benefits payable under private income benefits and CPP disability plans.

Technical Appendix
Total Income Benefits Costs - Pre-OMPP

Appendix 6
Exhibit 4
Page 1 of 4

	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590	1.0000	\$17.79	\$22,997,023	\$10.00	\$12,925,900
	2	0.005	1,182,720	1.0000	17.79	21,042,278	10.00	11,827,200
	3	0.008	1,135,411	1.0000	17.79	20,200,584	10.00	11,354,110
	4	0.011	1,095,672	1.0000	17.79	19,493,570	10.00	10,956,720
	5	0.014	1,062,802	1.0000	17.79	18,908,766	10.00	10,628,020
	6	0.016	1,036,231	1.0000	17.79	18,436,030	10.00	10,362,310
	7	0.019	1,015,507	1.0000	17.79	18,067,320	10.00	10,155,070
	8	0.022	1,000,000	1.0000	17.79	17,791,429	10.00	10,000,000
	9	0.025	988,169	0.9998	17.79	17,576,984	10.00	9,879,467
	10	0.027	975,780	0.9996	17.79	17,352,736	10.00	9,753,425
	11	0.030	962,743	0.9993	17.79	17,117,067	10.00	9,620,963
	12	0.033	948,956	0.9991	17.79	16,868,171	10.00	9,481,066
	13	0.036	934,311	0.9989	17.79	16,604,137	10.00	9,332,661
	14	0.038	918,747	0.9987	17.79	16,323,892	10.00	9,175,144
	15	0.041	902,351	0.9984	12.77	11,504,991	10.00	9,009,390
	16	0.044	885,441	0.9982	12.77	11,286,866	10.00	8,838,579
	17	0.047	868,503	0.9980	12.77	11,068,480	10.00	8,667,564
	18	0.049	852,015	0.9978	12.77	10,855,925	10.00	8,501,116
	19	0.052	836,290	0.9975	12.77	10,653,184	10.00	8,342,352
	20	0.055	821,406	0.9973	12.77	10,461,244	10.00	8,192,047
	21	0.058	807,271	0.9971	12.77	10,278,926	10.00	8,049,276
	22	0.060	793,766	0.9969	12.77	10,104,709	10.00	7,912,850
	23	0.063	780,876	0.9967	12.77	9,938,397	10.00	7,782,613
	24	0.066	768,734	0.9964	12.77	9,781,676	10.00	7,659,887
	25	0.068	757,600	0.9962	12.77	9,637,848	10.00	7,547,258
	26	0.071	747,797	0.9960	12.77	9,511,013	10.00	7,447,935
	27	0.074	739,664	0.9958	12.77	9,405,469	10.00	7,365,285
	28	0.077	738,105	0.9955	12.77	9,383,548	10.00	7,348,119
Weeks	4.5	0.086	734,041	0.9948	89.39	65,272,092	70.00	51,113,619
	5.5	0.105	687,923	0.9932	89.39	61,075,576	70.00	47,827,389
	6.5	0.125	598,120	0.9917	89.39	53,019,617	70.00	41,518,886
	7.5	0.144	542,608	0.9901	89.39	48,023,630	70.00	37,606,601
	8.5	0.163	498,142	0.9886	89.39	44,019,233	70.00	34,470,817
	9.5	0.182	460,058	0.9870	89.39	40,590,316	70.00	31,785,682
	10.5	0.201	427,115	0.9855	89.39	37,624,886	70.00	29,463,497
	11.5	0.221	398,368	0.9839	89.39	35,037,680	70.00	27,437,494
	12.5	0.240	373,000	0.9824	89.39	32,760,908	0	0
	13.5	0.259	350,615	0.9809	89.39	30,741,315	0	0
	14.5	0.278	330,561	0.9793	89.39	28,937,705	0	0
	15.5	0.297	312,485	0.9778	89.39	27,312,545	0	0
	16.5	0.316	296,124	0.9763	89.39	25,842,060	0	0
	17.5	0.336	281,300	0.9747	82.63	22,656,488	0	0
	18.5	0.355	267,818	0.9732	82.63	21,536,898	0	0
	19.5	0.374	255,516	0.9717	82.63	20,515,496	0	0
	20.5	0.393	244,256	0.9702	82.63	19,580,766	0	0
	21.5	0.412	233,910	0.9687	82.63	18,722,065	0	0
	22.5	0.432	224,355	0.9671	82.63	17,929,214	0	0
	23.5	0.451	215,475	0.9656	82.63	17,192,653	0	0
	24.5	0.470	207,168	0.9641	82.63	16,504,000	0	0
	25.5	0.489	199,352	0.9626	82.63	15,856,512	0	0
	26.5	0.508	191,273	0.9611	82.63	15,190,122	0	0
	27.5	0.527	183,135	0.9596	82.63	14,521,098	0	0

Technical Appendix
Total Income Benefits Costs - Pre-OMPP

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	28.5	0.547	175,448	0.9581	82.63	13,889,834	0	0
	29.5	0.566	168,188	0.9566	82.63	13,294,260	0	0
	30.5	0.585	161,327	0.9551	82.63	12,732,004	0	0
	31.5	0.604	154,843	0.9536	82.63	12,201,179	0	0
	32.5	0.623	152,476	0.9521	82.63	11,995,883	0	0
	33.5	0.642	149,304	0.9506	82.63	11,727,966	0	0
	34.5	0.662	145,362	0.9491	82.63	11,400,468	0	0
	35.5	0.681	140,655	0.9477	82.63	11,014,061	0	0
	36.5	0.700	135,587	0.9462	82.63	10,600,611	0	0
	37.5	0.719	130,581	0.9447	82.63	10,193,266	0	0
	38.5	0.738	126,032	0.9432	82.63	9,822,787	0	0
	39.5	0.758	121,873	0.9418	82.63	9,483,790	0	0
	40.5	0.777	118,160	0.9403	82.63	9,180,481	0	0
	41.5	0.796	114,742	0.9388	82.63	8,900,981	0	0
	42.5	0.815	113,435	0.9373	82.63	8,785,836	0	0
	43.5	0.834	108,266	0.9359	82.63	8,372,374	0	0
	44.5	0.853	105,238	0.9344	82.63	8,125,491	0	0
	45.5	0.873	102,345	0.9330	82.63	7,889,768	0	0
	46.5	0.892	99,577	0.9315	82.63	7,664,382	0	0
	47.5	0.911	96,928	0.9300	82.63	7,448,827	0	0
	48.5	0.930	94,391	0.9286	82.63	7,242,521	0	0
	49.5	0.949	91,958	0.9271	82.63	7,044,809	0	0
	50.5	0.968	89,626	0.9257	82.63	6,855,422	0	0
	51.5	0.988	87,387	0.9242	82.63	6,673,714	0	0
Month	12.5	1.042	82,662	0.9202	358	27,214,571	0	0
	13.5	1.125	76,527	0.9139	358	25,024,061	0	0
	14.5	1.208	72,286	0.9077	358	23,477,120	0	0
	15.5	1.292	66,747	0.9016	358	21,531,283	0	0
	16.5	1.375	62,806	0.8955	358	20,122,726	0	0
	17.5	1.458	59,346	0.8894	358	18,885,333	0	0
	18.5	1.542	56,888	0.8834	358	17,980,484	0	0
	19.5	1.625	54,715	0.8774	358	17,176,499	0	0
	20.5	1.708	52,776	0.8715	358	16,455,543	0	0
	21.5	1.792	51,051	0.8656	358	15,809,842	0	0
	22.5	1.875	49,503	0.8597	358	15,226,578	0	0
	23.5	1.958	48,125	0.8539	358	14,702,428	0	0
	24.5	2.042	31,830	0.8481	358	9,658,340	0	0
	25.5	2.125	31,049	0.8423	358	9,357,525	0	0
	26.5	2.208	30,346	0.8366	358	9,083,691	0	0
	27.5	2.292	29,711	0.8310	358	8,833,355	0	0
	28.5	2.375	29,143	0.8253	358	8,605,779	0	0
	29.5	2.458	28,632	0.8197	358	8,397,599	0	0
	30.5	2.542	28,180	0.8142	358	8,209,032	0	0
	31.5	2.625	27,800	0.8087	358	8,043,467	0	0
	32.5	2.708	27,467	0.8032	358	7,893,275	0	0
	33.5	2.792	27,179	0.7978	358	7,757,593	0	0
	34.5	2.875	26,931	0.7923	358	7,634,728	0	0
	35.5	2.958	26,686	0.7870	358	7,514,015	0	0
	36.5	3.042	26,442	0.7816	358	7,394,868	0	0
	37.5	3.125	26,147	0.7764	358	7,262,824	0	0
	38.5	3.208	25,886	0.7711	358	7,141,609	0	0
	39.5	3.292	25,659	0.7659	358	7,031,021	0	0

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Total Income Benefits Costs - Pre-OMPP

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Month	40.5	3.375	25,465	0.7607	358	6,930,585	0	0
	41.5	3.458	25,295	0.7555	358	6,837,674	0	0
	42.5	3.542	25,103	0.7504	358	6,739,798	0	0
	43.5	3.625	24,937	0.7453	358	6,649,867	0	0
	44.5	3.708	24,797	0.7403	358	6,567,732	0	0
	45.5	3.792	24,654	0.7353	358	6,485,615	0	0
	46.5	3.875	24,522	0.7303	358	6,407,184	0	0
	47.5	3.958	24,404	0.7253	358	6,333,151	0	0
	48.5	4.042	24,245	0.7204	358	6,249,259	0	0
	49.5	4.125	24,102	0.7155	358	6,170,310	0	0
	50.5	4.208	23,968	0.7107	358	6,094,432	0	0
	51.5	4.292	23,843	0.7059	358	6,021,571	0	0
	52.5	4.375	23,726	0.7011	358	5,951,425	0	0
	53.5	4.458	23,619	0.6963	358	5,884,445	0	0
	54.5	4.542	23,537	0.6916	358	5,824,285	0	0
	55.5	4.625	23,461	0.6869	358	5,766,145	0	0
	56.5	4.708	23,391	0.6823	358	5,709,990	0	0
	57.5	4.792	23,321	0.6777	358	5,654,331	0	0
	58.5	4.875	23,263	0.6731	358	5,602,054	0	0
	59.5	4.958	23,206	0.6685	358	5,550,465	0	0
Years	5.5	5.500	23,149	0.6396	4,297	63,618,831	0	0
	6.5	6.500	22,543	0.5895	4,297	57,099,910	0	0
	7.5	7.500	22,053	0.5433	4,297	51,482,740	0	0
	8.5	8.500	21,570	0.5008	4,297	46,410,300	0	0
	9.5	9.500	21,119	0.4615	4,297	41,880,113	0	0
	10.5	10.500	20,668	0.4254	4,297	37,774,890	0	0
	11.5	11.500	20,240	0.3920	4,297	34,094,594	0	0
	12.5	12.500	19,825	0.3613	4,297	30,779,281	0	0
	13.5	13.500	19,420	0.3330	4,297	27,788,478	0	0
	14.5	14.500	19,022	0.3069	4,297	25,086,610	0	0
	15.5	15.500	18,629	0.2829	4,297	22,643,607	0	0
	16.5	16.500	18,240	0.2607	4,297	20,433,895	0	0
	17.5	17.500	17,854	0.2403	4,297	18,434,532	0	0
	18.5	18.500	17,470	0.2215	4,297	16,624,927	0	0
	19.5	19.500	17,085	0.2041	4,297	14,984,840	0	0
	20.5	20.500	16,699	0.1881	4,297	13,498,883	0	0
	21.5	21.500	16,313	0.1734	4,297	12,153,783	0	0
	22.5	22.500	15,925	0.1598	4,297	10,935,215	0	0
	23.5	23.500	15,536	0.1473	4,297	9,832,351	0	0
	24.5	24.500	15,143	0.1358	4,297	8,832,840	0	0
	25.5	25.500	14,748	0.1251	4,297	7,928,514	0	0
	26.5	26.500	14,350	0.1153	4,297	7,110,184	0	0
	27.5	27.500	13,952	0.1063	4,297	6,371,412	0	0
	28.5	28.500	13,550	0.0980	6,476	5,595,673	0	0
	29.5	29.500	13,147	0.0903	6,476	4,866,657	0	0
	30.5	30.500	12,742	0.0832	6,476	4,186,236	0	0
	31.5	31.500	12,335	0.0767	6,476	3,546,191	0	0
	32.5	32.500	11,927	0.0707	6,476	2,949,500	0	0
	33.5	33.500	11,518	0.0651	6,476	2,399,247	0	0
	34.5	34.500	11,108	0.0600	6,476	1,891,147	0	0
	35.5	35.500	10,696	0.0553	6,476	1,420,132	0	0
	36.5	36.500	10,284	0.0510	6,476	984,759	0	0

Technical Appendix
Total Income Benefits Costs - Pre-OMPP

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Pre-OMPP Employed Benefits	Present Value of Payments For Employed	Pre-OMPP Housekeepers' Benefits	Present Value of Payments For Housekeepers
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
years	37.5	37.500	9,873	0.0470	6,476	3,005,537	0	0
	38.5	38.500	9,463	0.0433	6,476	2,655,046	0	0
	39.5	39.500	9,053	0.0399	6,476	2,341,025	0	0
	40.5	40.500	8,654	0.0368	6,476	2,062,532	0	0
	41.5	41.500	8,054	0.0339	6,476	1,769,154	0	0
	42.5	42.500	7,835	0.0313	6,476	1,586,219	0	0
	43.5	43.500	7,435	0.0288	6,476	1,387,316	0	0
	44.5	44.500	7,038	0.0266	6,476	1,210,359	0	0
	45.5	45.500	6,645	0.0245	6,476	1,053,246	0	0
	46.5	46.500	6,257	0.0226	6,476	914,053	0	0
	47.5	47.500	5,876	0.0208	6,476	791,147	0	0
	48.5	48.500	5,502	0.0192	6,476	682,757	0	0
	49.5	49.500	5,134	0.0177	6,476	587,181	0	0
	50.5	50.500	4,775	0.0163	6,476	503,338	0	0
	51.5	51.500	4,425	0.0150	6,476	429,902	0	0
	52.5	52.500	4,085	0.0138	6,476	365,779	0	0
	53.5	53.500	3,759	0.0127	6,476	310,220	0	0
	54.5	54.500	3,442	0.0117	6,476	261,805	0	0
	55.5	55.500	3,138	0.0108	6,476	219,984	0	0
	56.5	56.500	2,848	0.0100	6,476	184,013	0	0
	57.5	57.500	2,572	0.0092	6,476	153,161	0	0
	58.5	58.500	2,310	0.0085	6,476	126,783	0	0
	59.5	59.500	2,063	0.0078	6,476	104,356	0	0
	60.5	60.500	1,832	0.0072	6,476	85,411	0	0
	61.5	61.500	1,615	0.0066	6,476	69,396	0	0
	62.5	62.500	1,415	0.0061	6,476	56,038	0	0
(9)	Present value of all benefits paid from time 1 day to 62.5 years					\$2,512,370,389		\$559,340,313
(10)	Number disabled at 1 week					1,000,000		1,000,000
(11)	Present Value of average total income benefits					\$2,512		\$559
(12)	Pre-OMPP income benefits for unemployed					\$1,256		

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%.
- (5) Benefits amount for employed persons, from Exhibit 3, Columns (6), (7), and (8).
- (6) Present value of payments for all disabled wage earners during specified time period [Column (3) times Column (4) times Column (5)].
- (7) Benefits amount for housekeepers (\$70 per week).
- (8) Present value of payments for all disabled housekeepers during specified time period [Column (3) times Column (4) times Column (7)].
- (9) Sum of Columns (6) and (8).
- (10) Column (3) at 1 week.
- (11) Line (9) divided by Line (10).
- (12) Line (11) times 0.5. (Assumes half of unemployed are eligible for employed benefits.)

Technical Appendix
Calculation of OMPP Weekly
Income Replacement Benefits

Appendix 6
Exhibit 5
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		OMPP Weekly Income Replacement Benefits					
1989 Estimated Annual Income	Estimated Income Distribution	7/1/93 Estimated Annual Income	7/1/93 Estimated Weekly Income	Estimated CPP Disability Pension	With No Offsets	Private Offset Only	Private And CPP Offsets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,789	\$34.40	\$75.10	\$185.60	\$185.60	\$148.05
3,200	5.8%	3,816	73.39	80.95	185.60	185.60	145.13
5,200	5.1%	6,201	119.25	87.83	185.60	185.60	141.69
7,200	4.7%	8,586	165.12	94.71	185.60	116.25	97.31
9,200	4.0%	10,971	210.98	101.59	185.60	96.99	76.67
11,200	3.9%	13,356	256.85	108.47	205.48	97.60	75.91
14,000	6.1%	16,695	321.06	118.10	256.85	122.00	98.38
18,000	9.7%	21,465	412.79	131.86	330.24	156.86	130.49
23,000	11.3%	27,428	527.46	149.06	421.97	200.43	170.62
28,000	9.3%	33,391	642.13	157.70	513.70	244.01	212.47
36,000	14.9%	42,931	825.59	157.70	600.00	289.54	270.09
47,458	5.2%	56,595	1,088.37	157.70	600.00	305.30	305.30
53,850	3.9%	64,217	1,234.93	157.70	600.00	314.10	314.10
60,185	2.7%	71,771	1,380.22	157.70	600.00	322.81	322.81
66,127	2.1%	78,858	1,516.50	157.70	600.00	330.99	330.99
73,864	2.0%	88,084	1,693.93	157.70	600.00	341.64	341.64
85,357	0.8%	101,790	1,957.50	157.70	600.00	357.45	357.45
98,980	0.4%	118,036	2,269.92	157.70	600.00	376.20	376.20
115,743	0.2%	138,026	2,654.35	157.70	600.00	399.26	399.26
126,956	0.1%	151,397	2,911.49	157.70	600.00	414.69	414.69
157,174	0.2%	187,433	3,604.48	157.70	600.00	456.27	456.27
202,361	0.1%	241,319	4,640.75	157.70	600.00	518.44	518.44
244,240	0.1%	291,261	5,601.17	157.70	600.00	576.07	576.07
319,757	0.0%	381,316	7,333.00	157.70	600.00	600.00	600.00
515,529	0.1%	614,778	11,822.66	157.70	600.00	600.00	600.00
\$26,776		\$31,931	\$614.06	\$130.72			

Notes by Column:

Est. Weekly Avg. Income Benefits	\$398.31	\$217.14	\$194.10
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- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with four years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) Calculated as 75% of the CPP retirement pension plus \$69.94.
- (6) 80% of the greater of column (4) and \$232, subject to a maximum of \$600.
- (7) Column (6) reduced for benefits payable under private income benefits plans.
- (8) Column (6) reduced for benefits payable under private income benefits and CPP disability plans.

Technical Appendix
Total Income Benefits Costs - OMPP
Wage Earners

Appendix 6
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Length of Time Disabled		Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
(1)		(2)	(3)	(4)	(5)	(6)
Days	1	0.003	1,292,590	1.0000		
	2	0.005	1,182,720	1.0000		
	3	0.008	1,135,411	1.0000		
	4	0.011	1,095,672	1.0000		
	5	0.014	1,062,802	1.0000		
	6	0.016	1,036,231	1.0000		
	7	0.019	1,015,507	1.0000		
	8	0.022	1,000,000	1.0000	31.02	31,020,000
	9	0.025	988,169	0.9998	31.02	30,646,107
	10	0.027	975,780	0.9996	31.02	30,255,124
	11	0.030	962,743	0.9993	31.02	29,844,227
	12	0.033	948,956	0.9991	31.02	29,410,267
	13	0.036	934,311	0.9989	31.02	28,949,915
	14	0.038	918,747	0.9987	31.02	28,461,297
	15	0.041	902,351	0.9984	31.02	27,947,129
	16	0.044	885,441	0.9982	31.02	27,417,272
	17	0.047	868,503	0.9980	31.02	26,886,785
	18	0.049	852,015	0.9978	31.02	26,370,461
	19	0.052	836,290	0.9975	31.02	25,877,977
	20	0.055	821,406	0.9973	31.02	25,411,729
	21	0.058	807,271	0.9971	31.02	24,968,855
	22	0.060	793,766	0.9969	31.02	24,545,660
	23	0.063	780,876	0.9967	31.02	24,141,665
	24	0.066	768,734	0.9964	31.02	23,760,970
	25	0.068	757,600	0.9962	31.02	23,411,594
	26	0.071	747,797	0.9960	31.02	23,103,494
	27	0.074	739,664	0.9958	31.02	22,847,114
	28	0.077	738,105	0.9955	31.02	22,793,864
Weeks	4.5	0.086	734,041	0.9948	217.14	158,554,447
	5.5	0.105	687,923	0.9932	217.14	148,360,560
	6.5	0.125	598,120	0.9917	217.14	128,791,584
	7.5	0.144	542,608	0.9901	217.14	116,655,677
	8.5	0.163	498,142	0.9886	217.14	106,928,475
	9.5	0.182	460,058	0.9870	217.14	98,599,185
	10.5	0.201	427,115	0.9855	217.14	91,395,768
	11.5	0.221	398,368	0.9839	217.14	85,111,106
	12.5	0.240	373,065	0.9824	217.14	79,580,529
	13.5	0.259	350,615	0.9809	217.14	74,674,673
	14.5	0.278	330,561	0.9793	217.14	70,293,469
	15.5	0.297	312,485	0.9778	217.14	66,345,744
	16.5	0.316	296,124	0.9763	217.14	62,773,743
	17.5	0.336	281,300	0.9747	194.10	53,220,675
	18.5	0.355	267,818	0.9732	194.10	50,590,728
	19.5	0.374	255,516	0.9717	194.10	48,191,428
	20.5	0.393	244,256	0.9702	194.10	45,995,724
	21.5	0.412	233,910	0.9687	194.10	43,978,614
	22.5	0.432	224,355	0.9671	194.10	42,116,185
	23.5	0.451	215,475	0.9656	194.10	40,385,986
	24.5	0.470	207,168	0.9641	194.10	38,768,321
	25.5	0.489	199,352	0.9626	194.10	37,247,356
	26.5	0.508	191,273	0.9611	194.10	35,681,988
	27.5	0.527	183,135	0.9596	194.10	34,110,435

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)
Weeks	28.5	0.547	175,448	0.9581	194.10	32,627,579
	29.5	0.566	168,188	0.9566	194.10	31,228,560
	30.5	0.585	161,327	0.9551	194.10	29,907,805
	31.5	0.604	154,843	0.9536	194.10	28,660,884
	32.5	0.623	152,476	0.9521	194.10	28,178,639
	33.5	0.642	149,304	0.9506	194.10	27,549,295
	34.5	0.662	145,362	0.9491	194.10	26,779,994
	35.5	0.681	140,655	0.9477	194.10	25,872,314
	36.5	0.700	135,587	0.9462	194.10	24,901,109
	37.5	0.719	130,581	0.9447	194.10	23,944,245
	38.5	0.738	126,032	0.9432	194.10	23,073,980
	39.5	0.758	121,873	0.9418	194.10	22,277,667
	40.5	0.777	118,160	0.9403	194.10	21,565,186
	41.5	0.796	114,742	0.9388	194.10	20,908,635
	42.5	0.815	113,435	0.9373	194.10	20,638,154
	43.5	0.834	108,266	0.9359	194.10	19,666,922
	44.5	0.853	105,238	0.9344	194.10	19,086,989
	45.5	0.873	102,345	0.9330	194.10	18,533,267
	46.5	0.892	99,577	0.9315	194.10	18,003,831
	47.5	0.911	96,928	0.9300	194.10	17,497,486
	48.5	0.930	94,391	0.9286	194.10	17,012,868
	49.5	0.949	91,958	0.9271	194.10	16,548,437
	50.5	0.968	89,626	0.9257	194.10	16,103,564
	51.5	0.988	87,387	0.9242	194.10	15,676,725
Month	12.5	1.042	82,662	0.9202	841	63,972,020
	13.5	1.125	76,527	0.9139	841	58,822,891
	14.5	1.208	72,286	0.9077	841	55,186,569
	15.5	1.292	66,747	0.9016	841	50,612,580
	16.5	1.375	62,806	0.8955	841	47,301,551
	17.5	1.458	59,346	0.8894	841	44,392,870
	18.5	1.542	56,888	0.8834	841	42,265,884
	19.5	1.625	54,715	0.8774	841	40,375,993
	20.5	1.708	52,776	0.8715	841	38,681,277
	21.5	1.792	51,051	0.8656	841	37,163,457
	22.5	1.875	49,503	0.8597	841	35,792,406
	23.5	1.958	48,125	0.8539	841	34,560,311
	24.5	2.042	47,051	0.8481	841	33,560,102
	25.5	2.125	45,896	0.8423	841	32,514,477
	26.5	2.208	44,858	0.8366	841	31,563,806
	27.5	2.292	43,919	0.8310	841	30,693,713
	28.5	2.375	43,079	0.8253	841	29,902,681
	29.5	2.458	42,323	0.8197	841	29,178,870
	30.5	2.542	41,656	0.8142	841	28,524,439
	31.5	2.625	41,094	0.8087	841	27,948,950
	32.5	2.708	40,601	0.8032	841	27,426,559
	33.5	2.792	40,176	0.7978	841	26,955,588
	34.5	2.875	39,810	0.7923	841	26,529,057
	35.5	2.958	38,510	0.7870	841	25,488,876
	36.5	3.042	26,442	0.7816	841	17,382,770
	37.5	3.125	26,147	0.7764	841	17,072,380
	38.5	3.208	25,886	0.7711	841	16,787,448
	39.5	3.292	25,659	0.7659	841	16,527,493

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)
Month	40.5	3.375	25,465	0.7607	841	16,291,402
	41.5	3.458	25,295	0.7555	841	16,073,001
	42.5	3.542	25,103	0.7504	841	15,842,928
	43.5	3.625	24,937	0.7453	841	15,631,532
	44.5	3.708	24,797	0.7403	841	15,438,461
	45.5	3.792	24,654	0.7353	841	15,245,433
	46.5	3.875	24,522	0.7303	841	15,061,069
	47.5	3.958	24,404	0.7253	841	14,887,043
	48.5	4.042	24,245	0.7204	841	14,689,842
	49.5	4.125	24,102	0.7155	841	14,504,259
	50.5	4.208	23,968	0.7107	841	14,325,896
	51.5	4.292	23,843	0.7059	841	14,154,626
	52.5	4.375	23,726	0.7011	841	13,989,737
	53.5	4.458	23,619	0.6963	841	13,832,289
	54.5	4.542	23,537	0.6916	841	13,690,874
	55.5	4.625	23,461	0.6869	841	13,554,207
	56.5	4.708	23,391	0.6823	841	13,422,206
	57.5	4.792	23,321	0.6777	841	13,291,372
	58.5	4.875	23,263	0.6731	841	13,168,487
	59.5	4.958	23,206	0.6685	841	13,047,220
Years	5.5	5.500	23,149	0.6396	10,093	149,442,273
	6.5	6.500	22,543	0.5895	10,093	134,129,159
	7.5	7.500	22,053	0.5433	10,093	120,934,282
	8.5	8.500	21,570	0.5008	10,093	109,018,992
	9.5	9.500	21,119	0.4615	10,093	98,377,465
	10.5	10.500	20,668	0.4254	10,093	88,734,191
	11.5	11.500	20,240	0.3920	10,093	80,089,081
	12.5	12.500	19,825	0.3613	10,093	72,301,325
	13.5	13.500	19,420	0.3330	10,093	65,275,852
	14.5	14.500	19,022	0.3069	10,093	58,929,094
	15.5	15.500	18,629	0.2829	10,093	53,190,417
	16.5	16.500	18,240	0.2607	10,093	47,999,747
	17.5	17.500	17,854	0.2403	10,093	43,303,191
	18.5	18.500	17,470	0.2215	10,093	39,052,383
	19.5	19.500	17,085	0.2041	10,093	35,199,774
	20.5	20.500	16,699	0.1881	10,093	31,709,225
	21.5	21.500	16,313	0.1734	10,093	28,549,549
	22.5	22.500	15,925	0.1598	10,093	25,687,103
	23.5	23.500	15,536	0.1473	10,093	23,096,446
	24.5	24.500	15,143	0.1358	10,093	20,748,568
	25.5	25.500	14,748	0.1251	10,093	18,624,284
	26.5	26.500	14,350	0.1153	10,093	16,702,006
	27.5	27.500	13,952	0.1063	10,093	14,966,611
	28.5	28.500	13,550	0.0980	20,712	27,491,107
	29.5	29.500	13,147	0.0903	20,712	24,583,847
	30.5	30.500	12,742	0.0832	20,712	21,959,935
	31.5	31.500	12,335	0.0767	20,712	19,593,087
	32.5	32.500	11,927	0.0707	20,712	17,460,842
	33.5	33.500	11,518	0.0651	20,712	15,541,084
	34.5	34.500	11,108	0.0600	20,712	13,813,711
	35.5	35.500	10,696	0.0553	20,712	12,259,314
	36.5	36.500	10,284	0.0510	20,712	10,863,683

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<u>Length of Time Disabled</u>		<u>Length of Time Disabled in Years</u>	<u>Number Disabled</u>	<u>PV of \$1 Discounted at 8.5%</u>	<u>Benefits Amount</u>	<u>Present Value of Total Benefits</u>
(1)		(2)	(3)	(4)	(5)	(6)
Years	37.5	37.500	9,873	0.0470	20,712	9,612,457
	38.5	38.500	9,463	0.0433	20,712	8,491,499
	39.5	39.500	9,053	0.0399	20,712	7,487,181
	40.5	40.500	8,654	0.0368	20,712	6,596,491
	41.5	41.500	8,054	0.0339	20,712	5,658,196
	42.5	42.500	7,835	0.0313	20,712	5,073,125
	43.5	43.500	7,435	0.0288	20,712	4,436,984
	44.5	44.500	7,038	0.0266	20,712	3,871,029
	45.5	45.500	6,645	0.0245	20,712	3,368,545
	46.5	46.500	6,257	0.0226	20,712	2,923,370
	47.5	47.500	5,876	0.0208	20,712	2,530,286
	48.5	48.500	5,502	0.0192	20,712	2,183,628
	49.5	49.500	5,134	0.0177	20,712	1,877,951
	50.5	50.500	4,775	0.0163	20,712	1,609,801
	51.5	51.500	4,425	0.0150	20,712	1,374,935
	52.5	52.500	4,085	0.0138	20,712	1,169,853
	53.5	53.500	3,759	0.0127	20,712	992,160
	54.5	54.500	3,442	0.0117	20,712	837,318
	55.5	55.500	3,138	0.0108	20,712	703,563
	56.5	56.500	2,848	0.0100	20,712	588,519
	57.5	57.500	2,572	0.0092	20,712	489,848
	58.5	58.500	2,310	0.0085	20,712	405,483
	59.5	59.500	2,063	0.0078	20,712	333,757
	60.5	60.500	1,832	0.0072	20,712	273,166
	61.5	61.500	1,615	0.0066	20,712	221,944
	62.5	62.500	1,415	0.0061	20,712	179,225

(7)	Present value of all benefits paid from time 1 week to 62.5 years	\$5,732,912,887
(8)	Number disabled at 1 week	1,000,000
(9)	Present Value of average total income benefits	\$5,733

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%.
- (5) Benefits amount for employed persons, from Exhibit 5, Columns (6), (7), and (8).
- (6) Present value of payments for all disabled wage earners during specified time period [Column (3) times Column (4) times Column (5)].
- (7) Sum of Column (6).
- (8) Column (3) at 1 week.
- (9) Line (7) divided by Line (8).

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Length of Time Disabled		Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5 %	Benefits Amount	Present Value of Total Benefits
(1)		(2)	(3)	(4)	(5)	(6)
Days	1	0.003	1,292,590	1.0000	\$26.43	\$34,161,307
	2	0.005	1,182,720	1.0000	26.43	31,257,600
	3	0.008	1,135,411	1.0000	26.43	30,007,291
	4	0.011	1,095,672	1.0000	26.43	28,957,046
	5	0.014	1,062,802	1.0000	26.43	28,088,339
	6	0.016	1,036,231	1.0000	26.43	27,386,105
	7	0.019	1,015,507	1.0000	26.43	26,838,399
	8	0.022	1,000,000	1.0000	26.43	26,428,571
	9	0.025	988,169	0.9998	26.43	26,110,021
	10	0.027	975,780	0.9996	26.43	25,776,909
	11	0.030	962,743	0.9993	26.43	25,426,830
	12	0.033	948,956	0.9991	26.43	25,057,103
	13	0.036	934,311	0.9989	26.43	24,664,890
	14	0.038	918,747	0.9987	26.43	24,248,595
	15	0.041	902,351	0.9984	26.43	23,810,531
	16	0.044	885,441	0.9982	26.43	23,359,102
	17	0.047	868,503	0.9980	26.43	22,907,135
	18	0.049	852,015	0.9978	26.43	22,467,235
	19	0.052	836,290	0.9975	26.43	22,047,645
	20	0.055	821,406	0.9973	26.43	21,650,409
	21	0.058	807,271	0.9971	26.43	21,273,088
	22	0.060	793,766	0.9969	26.43	20,912,531
	23	0.063	780,876	0.9967	26.43	20,568,334
	24	0.066	768,734	0.9964	26.43	20,243,988
	25	0.068	757,600	0.9962	26.43	19,946,324
	26	0.071	747,797	0.9960	26.43	19,683,828
	27	0.074	739,664	0.9958	26.43	19,465,396
Weeks	28	0.077	738,105	0.9955	26.43	19,420,028
	4.5	0.086	734,041	0.9948	185.00	135,085,994
	5.5	0.105	687,923	0.9932	185.00	126,400,956
	6.5	0.125	598,120	0.9917	185.00	109,728,484
	7.5	0.144	542,608	0.9901	185.00	99,388,875
	8.5	0.163	498,142	0.9886	185.00	91,101,445
	9.5	0.182	460,058	0.9870	185.00	84,005,016
	10.5	0.201	427,115	0.9855	185.00	77,867,814
	11.5	0.221	398,368	0.9839	185.00	72,513,377
	12.5	0.240	373,065	0.9824	185.00	67,801,408
	13.5	0.259	350,615	0.9809	185.00	63,621,694
	14.5	0.278	330,561	0.9793	185.00	59,888,974
	15.5	0.297	312,485	0.9778	185.00	56,525,571
	16.5	0.316	296,124	0.9763	185.00	53,482,281
	17.5	0.336	281,300	0.9747	185.00	50,725,527
	18.5	0.355	267,818	0.9732	185.00	48,218,881
	19.5	0.374	255,516	0.9717	185.00	45,932,067
	20.5	0.393	244,256	0.9702	185.00	43,839,304
	21.5	0.412	233,910	0.9687	185.00	41,916,762
	22.5	0.432	224,355	0.9671	185.00	40,141,650
	23.5	0.451	215,475	0.9656	185.00	38,492,567
	24.5	0.470	207,168	0.9641	185.00	36,950,744
	25.5	0.489	199,352	0.9626	185.00	35,501,086
	26.5	0.508	191,273	0.9611	185.00	34,009,108
	27.5	0.527	183,135	0.9596	185.00	32,511,233

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Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)
Weeks	28.5	0.547	175,448	0.9581	185.00	31,097,898
	29.5	0.566	168,188	0.9566	185.00	29,764,470
	30.5	0.585	161,327	0.9551	185.00	28,505,635
	31.5	0.604	154,843	0.9536	185.00	27,317,174
	32.5	0.623	152,476	0.9521	185.00	26,857,539
	33.5	0.642	149,304	0.9506	185.00	26,257,700
	34.5	0.662	145,362	0.9491	185.00	25,524,466
	35.5	0.681	140,655	0.9477	185.00	24,659,341
	36.5	0.700	135,587	0.9462	185.00	23,733,669
	37.5	0.719	130,581	0.9447	185.00	22,821,666
	38.5	0.738	126,032	0.9432	185.00	21,992,201
	39.5	0.758	121,873	0.9418	185.00	21,233,222
	40.5	0.777	118,160	0.9403	185.00	20,554,145
	41.5	0.796	114,742	0.9388	185.00	19,928,374
	42.5	0.815	113,435	0.9373	185.00	19,670,575
	43.5	0.834	108,266	0.9359	185.00	18,744,877
	44.5	0.853	105,238	0.9344	185.00	18,192,133
	45.5	0.873	102,345	0.9330	185.00	17,664,371
	46.5	0.892	99,577	0.9315	185.00	17,159,756
	47.5	0.911	96,928	0.9300	185.00	16,677,151
	48.5	0.930	94,391	0.9286	185.00	16,215,253
	49.5	0.949	91,958	0.9271	185.00	15,772,596
	50.5	0.968	89,626	0.9257	185.00	15,348,580
	51.5	0.988	87,387	0.9242	185.00	14,941,752
Month	12.5	1.042	82,662	0.9202	801	60,930,602
	13.5	1.125	76,527	0.9139	801	56,026,278
	14.5	1.208	72,286	0.9077	801	52,562,837
	15.5	1.292	66,747	0.9016	801	48,706,308
	16.5	1.375	62,806	0.8955	801	45,052,696
	17.5	1.458	59,346	0.8894	801	42,282,302
	18.5	1.542	56,888	0.8834	801	40,256,439
	19.5	1.625	54,715	0.8774	801	38,456,399
	20.5	1.708	52,776	0.8715	801	36,842,255
	21.5	1.792	51,051	0.8656	801	35,396,597
	22.5	1.875	49,503	0.8597	801	34,090,730
	23.5	1.958	48,125	0.8539	801	32,917,212
	24.5	2.042	47,051	0.8481	801	31,964,556
	25.5	2.125	45,896	0.8423	801	30,968,643
	26.5	2.208	44,858	0.8366	801	30,063,170
	27.5	2.292	43,919	0.8310	801	29,234,443
	28.5	2.375	43,079	0.8253	801	28,481,019
	29.5	2.458	42,323	0.8197	801	27,791,621
	30.5	2.542	41,656	0.8142	801	27,168,303
	31.5	2.625	41,094	0.8087	801	26,620,174
	32.5	2.708	40,601	0.8032	801	26,122,620
	33.5	2.792	40,176	0.7978	801	25,674,040
	34.5	2.875	39,810	0.7923	801	25,267,788
	35.5	2.958	38,510	0.7870	801	24,277,059
	36.5	3.042	26,442	0.7816	801	16,556,342
	37.5	3.125	26,147	0.7764	801	16,260,709
	38.5	3.208	25,886	0.7711	801	15,989,323
	39.5	3.292	25,659	0.7659	801	15,741,727

Technical Appendix
Total Income Benefits Costs - OMPP
Non-wage Earners

Appendix 6
Exhibit 7
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Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefit Amount	Present Value of Total Benefits	
(1)	(2)	(3)	(4)	(5)	(6)	
Month	40.5	3,375	25,465	0.7607	801	15,516,860
	41.5	3,458	25,295	0.7555	801	15,308,843
	42.5	3,542	25,103	0.7504	801	15,089,708
	43.5	3,625	24,937	0.7453	801	14,888,363
	44.5	3,708	24,797	0.7403	801	14,704,471
	45.5	3,792	24,654	0.7353	801	14,520,620
	46.5	3,875	24,522	0.7303	801	14,345,021
	47.5	3,958	24,404	0.7253	801	14,179,269
	48.5	4,042	24,245	0.7204	801	13,991,444
	49.5	4,125	24,102	0.7155	801	13,814,684
	50.5	4,208	23,968	0.7107	801	13,644,800
	51.5	4,292	23,843	0.7059	801	13,481,674
	52.5	4,375	23,726	0.7011	801	13,324,624
	53.5	4,458	23,619	0.6963	801	13,174,661
	54.5	4,542	23,537	0.6916	801	13,039,970
	55.5	4,625	23,461	0.6869	801	12,909,800
	56.5	4,708	23,391	0.6823	801	12,784,075
	57.5	4,792	23,321	0.6777	801	12,659,461
	58.5	4,875	23,263	0.6731	801	12,542,418
	59.5	4,958	23,206	0.6685	801	12,426,916
Years	5.5	5,500	23,149	0.6396	9,620	142,435,964
	6.5	6,500	22,543	0.5895	9,620	127,840,775
	7.5	7,500	22,053	0.5433	9,620	115,264,514
	8.5	8,500	21,570	0.5008	9,620	103,907,849
	9.5	9,500	21,119	0.4615	9,620	93,765,229
	10.5	10,500	20,668	0.4254	9,620	84,574,061
	11.5	11,500	20,240	0.3920	9,620	76,334,260
	12.5	12,500	19,825	0.3613	9,620	68,911,619
	13.5	13,500	19,420	0.3330	9,620	62,215,521
	14.5	14,500	19,022	0.3069	9,620	56,166,318
	15.5	15,500	18,629	0.2829	9,620	50,696,688
	16.5	16,500	18,240	0.2607	9,620	45,749,372
	17.5	17,500	17,854	0.2403	9,620	41,273,006
	18.5	18,500	17,470	0.2215	9,620	37,221,488
	19.5	19,500	17,085	0.2041	9,620	33,549,502
	20.5	20,500	16,699	0.1881	9,620	30,222,599
	21.5	21,500	16,313	0.1734	9,620	27,211,059
	22.5	22,500	15,925	0.1598	9,620	24,482,813
	23.5	23,500	15,536	0.1473	9,620	22,013,614
	24.5	24,500	15,143	0.1358	9,620	19,775,812
25.5	25,500	14,748	0.1251	9,620	17,751,121	
26.5	26,500	14,350	0.1153	9,620	15,918,965	
27.5	27,500	13,952	0.1063	9,620	14,264,930	
28.5	28,500	13,550	0.0980	9,620	12,768,584	
29.5	29,500	13,147	0.0903	9,620	11,418,272	
30.5	30,500	12,742	0.0832	9,620	10,199,563	
31.5	31,500	12,335	0.0767	9,620	9,100,251	
32.5	32,500	11,927	0.0707	9,620	8,109,904	
33.5	33,500	11,518	0.0651	9,620	7,218,248	
34.5	34,500	11,108	0.0600	9,620	6,415,949	
35.5	35,500	10,696	0.0553	9,620	5,693,990	
36.5	36,500	10,284	0.0510	9,620	5,045,772	

Technical Appendix
Total Income Benefits Costs - OMPP
Non-wage Earners

Appendix 6
Exhibit 7
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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)
Years	37.5	37.500	9,873	0.0470	9,620	4,464,625
	38.5	38.500	9,463	0.0433	9,620	3,943,982
	39.5	39.500	9,053	0.0399	9,620	3,477,514
	40.5	40.500	8,654	0.0368	9,620	3,063,822
	41.5	41.500	8,054	0.0339	9,620	2,628,019
	42.5	42.500	7,835	0.0313	9,620	2,356,276
	43.5	43.500	7,435	0.0288	9,620	2,060,812
	44.5	44.500	7,038	0.0266	9,620	1,797,947
	45.5	45.500	6,645	0.0245	9,620	1,564,562
	46.5	46.500	6,257	0.0226	9,620	1,357,795
	47.5	47.500	5,876	0.0208	9,620	1,175,223
	48.5	48.500	5,502	0.0192	9,620	1,014,213
	49.5	49.500	5,134	0.0177	9,620	872,238
	50.5	50.500	4,775	0.0163	9,620	747,692
	51.5	51.500	4,425	0.0150	9,620	638,606
	52.5	52.500	4,085	0.0138	9,620	543,353
	53.5	53.500	3,759	0.0127	9,620	460,821
	54.5	54.500	3,442	0.0117	9,620	388,903
	55.5	55.500	3,138	0.0108	9,620	326,778
	56.5	56.500	2,848	0.0100	9,620	273,345
	57.5	57.500	2,572	0.0092	9,620	227,516
	58.5	58.500	2,310	0.0085	9,620	188,332
	59.5	59.500	2,063	0.0078	9,620	155,018
	60.5	60.500	1,832	0.0072	9,620	126,875
	61.5	61.500	1,615	0.0066	9,620	103,085
	62.5	62.500	1,415	0.0061	9,620	83,243
	63.5	63.5000	1231	0.005636	9,620	66,745
	64.5	64.5000	1062	0.005194	9,620	53,071
	65.5	65.5000	909	0.004787	9,620	41,867
	66.5	66.5000	770	0.004412	9,620	32,686
	67.5	67.5000	648	0.004066	9,620	25,352
	68.5	68.5000	541	0.003748	9,620	19,508
	69.5	69.5000	446	0.003454	9,620	14,822
	70.5	70.5000	365	0.003184	9,620	11,180
	71.5	71.5000	297	0.002934	9,620	8,385
	72.5	72.5000	239	0.002704	9,620	6,219
	73.5	73.5000	191	0.002492	9,620	4,580
	74.5	74.5000	152	0.002297	9,620	3,360
	75.5	75.5000	119	0.002117	9,620	2,424
	76.5	76.5000	94	0.001951	9,620	1,765
	77.5	77.5000	73	0.001798	9,620	1,263
	78.5	78.5000	58	0.001657	9,620	925
	79.5	79.5000	45	0.001527	9,620	661
	80.5	80.5000	35	0.001408	9,620	474
	81.5	81.5000	28	0.001297	9,620	350
	82.5	82.5000	21	0.001196	9,620	242
	83.5	83.5000	17	0.001102	9,620	180
	84.5	84.5000	13	0.001016	9,620	127
	85.5	85.5000	9	0.000936	9,620	81
	86.5	86.5000	7	0.000863	9,620	58
	87.5	87.5000	6	0.000795	9,620	46
	88.5	88.5000	4	0.000733	9,620	28

Technical Appendix
Total Income Benefits Costs - OMPP
Non-wage Earners

Appendix 6
Exhibit 7
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Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	PV of \$1 Discounted at 8.5%	Benefits Amount	Present Value of Total Benefits
(1)	(2)	(3)	(4)	(5)	(6)
Years 89.5	89.5000	3	0.000675	9,620	20
90.5	90.5000	2	0.000622	9,620	12
91.5	91.5000	1	0.000574	9,620	6
92.5	92.5000	1	0.000529	9,620	5
93.5	93.5000	1	0.000487	9,620	5

Category	OMPP Costs
(7) Unemployed	\$5,161
(8) Pre-School	\$609
(9) Elementary	\$1,152
(10) Secondary	\$2,314
(11) Post-Secondary	\$5,161
(12) Caregivers	\$5,161
(13) All Other	\$5,161
(14) Retired	\$4,483
(15) Child Care-Caregiver	\$2,172

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%.
- (5) Benefits amount for non-wage earners (\$185 per week).
- (6) Present value of payments for all disabled non-wage earners during specified time period [Column (3) times Column (4) times Column (5)].
- (7), (12), & (13) Sum of Column (6) from 8 days to 62.5 years divided by 1 million.
- (8) Sum of Column (6) from 13.5 years to 93.5 years divided by 1 million.
- (9) Sum of Column (6) from 7.5 years to 90.5 years divided by 1 million.
- (10) Sum of Column (6) from 18.5 months to 84.5 years divided by 1 million.
- (11) Sum of Column (6) from 8 days to 79.5 years divided by 1 million.
- (14) Sum of Column (6) from 8 days to 11.5 years divided by 1 million.
- (15) [Sum of Column (6) from 8 days to 8.5 years divided by 1 million] times \$50/\$185 times 1.9 (Benefits are \$50 per child and the number of children per family is assumed to be 1.9.)

Technical Appendix
Calculation of TRA Weekly
Income Replacement Benefits

Appendix 6
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						TRA Weekly Income Replacement Benefits			
1989	Esti- mated	7/1/93	7/1/93	7/1/93			With	With	
Estimated	Income	Estimated	Estimated	Estimated			Private	Private	CPP
Annual	Distri- bution	Annual	Gross	Net	CPP	With No	Offset	& CPP	Disability
Income		Income	Weekly	Weekly	Disability	Offset	Only	Offsets	Only
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
\$1,500	7.2%	\$1,789	\$34.40	\$26.40	\$75.10	\$185.00	\$185.00	\$147.45	\$147.45
3,200	5.8%	3,816	73.39	56.32	80.95	185.00	185.00	144.53	144.53
5,200	5.1%	6,201	119.25	91.52	87.83	185.00	185.00	141.09	141.09
7,200	4.7%	8,586	165.12	126.72	94.71	185.00	115.65	96.71	137.65
9,200	4.0%	10,971	210.98	161.93	101.59	185.00	96.39	76.07	134.21
11,200	3.9%	13,356	256.85	197.13	108.47	185.00	83.27	61.57	130.77
14,000	6.1%	16,695	321.06	246.41	118.10	221.77	97.45	73.83	162.72
18,000	9.7%	21,465	412.79	316.81	131.86	285.13	125.29	98.92	219.20
23,000	11.3%	27,428	527.46	405.38	149.06	364.84	160.44	130.63	290.31
28,000	9.3%	33,391	642.13	495.95	157.70	446.36	196.87	165.33	367.50
36,000	14.9%	42,931	825.59	640.06	157.70	576.06	254.63	223.09	497.20
47,458	5.2%	56,595	1,088.37	827.27	157.70	744.55	325.28	293.74	665.69
53,850	3.9%	64,217	1,234.93	931.70	157.70	838.53	364.68	333.14	759.67
60,185	2.7%	71,771	1,380.22	1,035.20	157.70	931.68	403.74	372.20	852.83
66,127	2.1%	78,858	1,516.50	1,132.30	157.70	1,000.00	432.75	405.02	930.68
73,864	2.0%	88,084	1,693.93	1,254.04	157.70	1,000.00	433.68	427.87	985.47
85,357	0.8%	101,790	1,957.50	1,432.26	157.70	1,000.00	434.36	434.36	1,000.00
98,980	0.4%	118,036	2,269.92	1,641.70	157.70	1,000.00	434.67	434.67	1,000.00
115,743	0.2%	138,026	2,654.35	1,896.35	157.70	1,000.00	434.23	434.23	1,000.00
126,956	0.1%	151,397	2,911.49	2,066.68	157.70	1,000.00	433.94	433.94	1,000.00
157,174	0.2%	187,433	3,604.48	2,525.73	157.70	1,000.00	433.14	433.14	1,000.00
202,361	0.1%	241,319	4,640.75	3,212.16	157.70	1,000.00	431.95	431.95	1,000.00
244,240	0.1%	291,261	5,601.17	3,848.35	157.70	1,000.00	430.85	430.85	1,000.00
319,757	0.0%	381,316	7,333.00	4,995.54	157.70	1,000.00	428.86	428.86	1,000.00
515,529	0.1%	614,778	11,822.66	7,969.54	157.70	1,000.00	423.70	423.70	1,000.00
\$26,776		\$31,931	\$614.06	465.33	\$130.72	\$425.11	\$207.40	\$178.13	\$362.89

Estimated Weekly Average Part Time Income Benefits	\$185.00	\$144.72
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Notes by Column:	Estimated Weekly Average Full Time Income Benefits	\$212.34	\$185.52
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- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with four years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) From Column (20), Page 2 of this exhibit.
- (6) Calculated as 75% of the CPP retirement pension plus \$69.94.
- (7) 90% of Column (20), Page 2 of this exhibit, subject to a minimum of \$185 and a maximum of \$1,000.
- (8) Column (7) reduced for benefits payable under private income benefits plans.
- (9) Column (7) reduced for benefits payable under private income benefits and CPP disability plans.
- (10) Column (7) reduced for benefits payable under CPP disability plan.

Technical Appendix
Calculation of TRA Weekly
Income Replacement Benefits

Appendix 6
Exhibit 8
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Gross Weekly Income	Taxable Weekly Income	Basic Federal Tax	Prov. Tax	Prov. Surtax	Fed Surtax	UI Premium	CPP Contribution	Total Deductions	Net Weekly Income
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
\$34.40	\$24.08	\$4.09	\$2.17	\$0.00	\$0.20	\$0.77	\$0.76	\$8.00	\$26.40
73.39	51.37	8.73	4.63	0.00	0.44	1.65	1.61	17.06	56.32
119.25	83.48	14.19	7.52	0.00	0.71	2.68	2.62	27.73	91.52
165.12	115.58	19.65	10.41	0.00	0.98	3.72	3.63	38.39	126.72
210.98	147.69	25.11	13.31	0.00	1.26	4.75	4.64	49.06	161.93
256.85	179.80	30.57	16.20	0.00	1.53	5.78	5.65	59.72	197.13
321.06	224.74	38.21	20.25	0.00	1.91	7.22	7.06	74.65	246.41
412.79	288.96	49.12	26.03	0.00	2.46	9.29	9.08	95.98	316.81
527.46	369.22	62.77	33.27	0.00	3.14	11.87	11.04	122.08	405.38
642.13	449.49	76.41	40.50	0.00	3.82	14.40	11.04	146.17	495.95
825.59	577.91	101.32	53.70	0.00	5.07	14.40	11.04	185.53	640.06
1,088.37	761.86	149.14	79.05	0.00	7.46	14.40	11.04	261.09	827.27
1,234.93	864.45	175.82	93.18	0.00	8.79	14.40	11.04	303.24	931.70
1,380.22	966.15	202.26	107.20	0.00	10.11	14.40	11.04	345.02	1,035.20
1,516.50	1,061.55	227.07	120.34	0.00	11.35	14.40	11.04	384.21	1,132.30
1,693.93	1,185.75	262.31	139.02	0.00	13.12	14.40	11.04	439.88	1,254.04
1,957.50	1,370.25	315.81	167.38	0.00	16.61	14.40	11.04	525.24	1,432.26
2,269.92	1,588.95	379.23	200.99	0.87	21.68	14.40	11.04	628.22	1,641.70
2,654.35	1,858.04	457.27	242.35	5.00	27.93	14.40	11.04	758.00	1,896.35
2,911.49	2,038.04	509.47	270.02	7.77	32.10	14.40	11.04	844.80	2,066.68
3,604.48	2,523.13	650.15	344.58	15.23	43.36	14.40	11.04	1,078.75	2,525.73
4,640.75	3,248.52	860.51	456.07	26.38	60.19	14.40	11.04	1,428.59	3,212.16
5,601.17	3,920.82	1,055.47	559.40	36.71	75.78	14.40	11.04	1,752.81	3,848.35
7,333.00	5,133.10	1,407.04	745.73	55.34	103.91	14.40	11.04	2,337.46	4,995.54
11,822.66	8,275.86	2,318.44	1,228.77	103.65	176.82	14.40	11.04	3,853.12	7,969.54
\$614.06									\$465.33

Notes by Column:

- (11) From Column (4) page 1 of this exhibit.
- (12) Column (9) times 70%.
- (13) 17% of the first \$543.75 of Column (12) plus 26% of taxable income between \$543.75 and \$1,087.50, plus 29% of taxable income above \$1,087.50.
- (14) 53% of Column (13).
- (15) 10% of the portion of Column (14) in excess of \$192.31.
- (16) 5% of Column (13), plus 3% of the portion of Column (13) in excess of \$288.46.
- (17) 2.25% of the first \$640 of Column (11).
- (18) 2.2% of the first \$501.92 of Column (11).
- (19) Sum of Columns (13) through (18).
- (20) Column (11) minus Column (19).

Technical Appendix
Total Income Benefits Costs - The Road Ahead
Wage Earners

Appendix 6
Exhibit 9
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	Length of Time Disabled	Length of Time Disabled in Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590	1.00000				
	2	0.005	1,182,720	1.00000				
	3	0.008	1,135,411	1.00000				
	4	0.011	1,095,672	1.00000				
	5	0.014	1,062,802	1.00000				
	6	0.016	1,036,231	1.00000				
	7	0.019	1,015,507	1.00000				
	8	0.022	1,000,000	1.00000	\$26.43	\$30.33	\$29.63	\$29,627,351
	9	0.025	988,169	0.99978	26.43	30.33	29.63	29,270,245
	10	0.027	975,780	0.99955	26.43	30.33	29.63	28,896,815
	11	0.030	962,743	0.99933	26.43	30.33	29.63	28,504,365
	12	0.033	948,956	0.99910	26.43	30.33	29.63	28,089,888
	13	0.036	934,311	0.99888	26.43	30.33	29.63	27,650,203
	14	0.038	918,747	0.99866	26.43	30.33	29.63	27,183,522
	15	0.041	902,351	0.99844	26.43	30.33	29.63	26,692,437
	16	0.044	885,441	0.99821	26.43	30.33	29.63	26,186,369
	17	0.047	868,503	0.99799	26.43	30.33	29.63	25,679,698
	18	0.049	852,015	0.99777	26.43	30.33	29.63	25,166,555
	19	0.052	836,290	0.99754	26.43	30.33	29.63	24,716,180
	20	0.055	821,406	0.99732	26.43	30.33	29.63	24,270,865
	21	0.058	807,271	0.99710	26.43	30.33	29.63	23,847,874
	22	0.060	793,766	0.99687	26.43	30.33	29.63	23,443,678
	23	0.063	780,876	0.99665	26.43	30.33	29.63	23,057,821
	24	0.066	768,734	0.99643	26.43	30.33	29.63	22,694,217
	25	0.068	757,600	0.99621	26.43	30.33	29.63	22,360,526
	26	0.071	747,797	0.99598	26.43	30.33	29.63	22,066,258
	27	0.074	739,664	0.99576	26.43	30.33	29.63	21,821,389
	28	0.077	738,105	0.99554	26.43	30.33	29.63	21,770,529
Weeks	4.5	0.086	734,041	0.99476	185.00	212.34	207.39	151,436,116
	5.5	0.105	687,923	0.99320	185.00	212.34	207.39	141,699,886
	6.5	0.125	598,120	0.99165	185.00	212.34	207.39	123,009,463
	7.5	0.144	542,608	0.99010	185.00	212.34	207.39	111,418,399
	8.5	0.163	498,142	0.98855	185.00	212.34	207.39	102,127,901
	9.5	0.182	460,058	0.98701	185.00	212.34	207.39	94,172,556
	10.5	0.201	427,115	0.98547	185.00	212.34	207.39	87,292,538
	11.5	0.221	398,368	0.98392	185.00	212.34	207.39	81,290,027
	12.5	0.240	373,065	0.98239	185.00	212.34	207.39	76,007,746
	13.5	0.259	350,615	0.98085	185.00	212.34	207.39	71,322,140
	14.5	0.278	330,561	0.97932	185.00	212.34	207.39	67,137,631
	15.5	0.297	312,485	0.97779	185.00	212.34	207.39	63,347,139
	16.5	0.316	296,124	0.97626	185.00	212.34	207.39	59,935,504
	17.5	0.336	281,300	0.97473	144.72	185.52	178.14	48,843,254
	18.5	0.355	267,818	0.97321	144.72	185.52	178.14	46,429,621
	19.5	0.374	255,516	0.97169	144.72	185.52	178.14	44,227,664
	20.5	0.393	244,256	0.97017	144.72	185.52	178.14	42,212,558
	21.5	0.412	233,910	0.96865	144.72	185.52	178.14	40,361,356
	22.5	0.432	224,355	0.96714	144.72	185.52	178.14	38,652,113
	23.5	0.451	215,475	0.96562	144.72	185.52	178.14	37,064,223
	24.5	0.470	207,168	0.96411	144.72	185.52	178.14	35,579,612
	25.5	0.489	199,352	0.96261	144.72	185.52	178.14	34,183,746
	26.5	0.508	191,273	0.96110	185.52	185.52	185.52	34,104,701

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Insured	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	27.5	0.527	183,135	0.95960	185.52	185.52	185.52	32,602,616
	28.5	0.547	175,448	0.95810	185.52	185.52	185.52	31,185,309
	29.5	0.566	168,188	0.95660	185.52	185.52	185.52	29,848,132
	30.5	0.585	161,327	0.95511	185.52	185.52	185.52	28,585,759
	31.5	0.604	154,843	0.95361	185.52	185.52	185.52	27,393,958
	32.5	0.623	152,476	0.95212	185.52	185.52	185.52	26,933,030
	33.5	0.642	149,304	0.95063	185.52	185.52	185.52	26,331,506
	34.5	0.662	145,362	0.94915	185.52	185.52	185.52	25,596,210
	35.5	0.681	140,655	0.94766	185.52	185.52	185.52	24,728,654
	36.5	0.700	135,587	0.94618	185.52	185.52	185.52	23,800,379
	37.5	0.719	130,581	0.94470	185.52	185.52	185.52	22,885,813
	38.5	0.738	126,032	0.94323	185.52	185.52	185.52	22,054,017
	39.5	0.758	121,873	0.94175	185.52	185.52	185.52	21,292,905
	40.5	0.777	118,160	0.94028	185.52	185.52	185.52	20,611,918
	41.5	0.796	114,742	0.93881	185.52	185.52	185.52	19,984,389
	42.5	0.815	113,435	0.93734	185.52	185.52	185.52	19,725,865
	43.5	0.834	108,266	0.93588	185.52	185.52	185.52	18,797,565
	44.5	0.853	105,238	0.93441	185.52	185.52	185.52	18,243,267
	45.5	0.873	102,345	0.93295	185.52	185.52	185.52	17,714,022
	46.5	0.892	99,577	0.93149	185.52	185.52	185.52	17,207,989
	47.5	0.911	96,928	0.93004	185.52	185.52	185.52	16,724,027
	48.5	0.930	94,391	0.92858	185.52	185.52	185.52	16,260,831
	49.5	0.949	91,958	0.92713	185.52	185.52	185.52	15,816,930
	50.5	0.968	89,626	0.92568	185.52	185.52	185.52	15,391,722
	51.5	0.988	87,387	0.92424	185.52	185.52	185.52	14,983,751
Months	12.5	1.042	82,662	0.98459	803	803	803	65,378,997
	13.5	1.125	76,527	0.97792	803	803	803	60,116,620
	14.5	1.208	72,286	0.97129	803	803	803	56,400,322
	15.5	1.292	66,747	0.96471	803	803	803	51,725,734
	16.5	1.375	62,806	0.95817	803	803	803	48,341,883
	17.5	1.458	59,346	0.95168	803	803	803	45,369,230
	18.5	1.542	56,888	0.94523	803	803	803	43,195,464
	19.5	1.625	54,715	0.93883	803	803	803	41,264,007
	20.5	1.708	52,776	0.93247	803	803	803	39,532,018
	21.5	1.792	51,051	0.92615	803	803	803	37,980,816
	22.5	1.875	49,503	0.91988	803	803	803	36,579,611
	23.5	1.958	48,125	0.91364	803	803	803	35,320,417
	24.5	2.042	31,830	0.97097	803	803	803	24,526,930
	25.5	2.125	31,049	0.96440	803	803	803	24,053,680
	26.5	2.208	30,346	0.95786	803	803	803	23,349,785
	27.5	2.292	29,711	0.95137	803	803	803	22,706,292
	28.5	2.375	29,143	0.94493	803	803	803	22,121,304
	29.5	2.458	28,632	0.93852	803	803	803	21,586,174
	30.5	2.542	28,180	0.93217	803	803	803	21,101,440
	31.5	2.625	27,800	0.92585	803	803	803	20,675,872
	32.5	2.708	27,467	0.91958	803	803	803	20,289,801
	33.5	2.792	27,179	0.91335	803	803	803	19,941,028
	34.5	2.875	26,931	0.90716	803	803	803	19,625,200
	35.5	2.958	26,686	0.90101	803	803	803	19,314,906
	36.5	3.042	26,442	0.89555	803	803	803	20,339,240
	37.5	3.125	26,147	0.89106	803	803	803	19,976,059

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Months	38.5	3.208	25,886	0.94462	903	903	903	19,642,665
	39.5	3.292	25,639	0.93822	903	903	903	19,338,497
	40.5	3.375	25,465	0.93186	903	903	903	19,042,251
	41.5	3.458	25,295	0.92555	903	903	903	18,806,705
	42.5	3.542	25,103	0.91928	903	903	903	18,537,501
	43.5	3.625	24,937	0.91305	903	903	903	18,290,131
	44.5	3.708	24,797	0.90686	903	903	903	18,064,242
	45.5	3.792	24,654	0.90072	903	903	903	17,838,384
	46.5	3.875	24,522	0.89462	903	903	903	17,622,643
	47.5	3.958	24,404	0.88856	903	903	903	17,419,038
	48.5	4.042	24,345	0.88251	903	903	903	18,391,479
	49.5	4.125	24,102	0.87791	903	903	903	18,159,131
	50.5	4.208	23,968	0.87156	903	903	903	17,935,823
	51.5	4.292	23,843	0.86525	903	903	903	17,721,396
	52.5	4.375	23,726	0.85898	903	903	903	17,514,957
	53.5	4.458	23,619	0.85275	903	903	903	17,317,834
	54.5	4.542	23,537	0.84657	903	903	903	17,140,783
	55.5	4.625	23,461	0.84043	903	903	903	16,969,679
	56.5	4.708	23,391	0.83433	903	903	903	16,804,416
	57.5	4.792	23,321	0.82827	903	903	903	16,640,613
	58.5	4.875	23,263	0.82225	903	903	903	16,486,763
	59.5	4.958	23,206	0.81627	903	903	903	16,334,938
Years	5.5	5.500	23,149	0.81028	9,647	9,647	9,647	200,333,334
	6.5	6.500	22,543	0.80468	9,647	9,647	9,647	192,393,799
	7.5	7.500	22,053	0.79945	9,647	9,647	9,647	183,609,874
	8.5	8.500	21,570	0.79459	9,647	9,647	9,647	179,034,852
	9.5	9.500	21,119	0.78949	9,647	9,647	9,647	172,868,087
	10.5	10.500	20,648	0.78476	9,647	9,647	9,647	166,837,614
	11.5	11.500	20,240	0.78019	9,647	9,647	9,647	161,123,937
	12.5	12.500	19,825	0.77578	9,647	9,647	9,647	155,638,412
	13.5	13.500	19,420	0.77153	9,647	9,647	9,647	150,351,187
	14.5	14.500	19,022	0.76744	9,647	9,647	9,647	145,233,851
	15.5	15.500	18,629	0.76350	9,647	9,647	9,647	140,266,919
	16.5	16.500	18,240	0.75971	9,647	9,647	9,647	135,439,265
	17.5	17.500	17,854	0.75607	9,647	9,647	9,647	130,740,254
	18.5	18.500	17,470	0.75257	9,647	9,647	9,647	126,159,726
	19.5	19.500	17,085	0.74922	9,647	9,647	9,647	121,673,739
	20.5	20.500	16,699	0.74602	9,647	9,647	9,647	117,280,653
	21.5	21.500	16,313	0.74295	9,647	9,647	9,647	112,985,780
	22.5	22.500	15,925	0.74003	9,647	9,647	9,647	108,773,582
	23.5	23.500	15,536	0.69824	9,647	9,647	9,647	104,649,520
	24.5	24.500	15,143	0.69839	9,647	9,647	9,647	100,592,127
	25.5	25.500	14,748	0.67907	9,647	9,647	9,647	96,613,816
	26.5	26.500	14,350	0.66968	9,647	9,647	9,647	92,706,898
	27.5	27.500	13,952	0.66042	9,647	9,647	9,647	88,889,539
	28.5	28.500	13,556	0.65168	5,113	5,113	5,113	42,168,613
	29.5	29.500	13,147	0.58624	5,113	5,113	5,113	39,407,015
	30.5	30.500	12,742	0.56463	5,113	5,113	5,113	36,785,022
	31.5	31.500	12,333	0.54381	5,113	5,113	5,113	34,297,237
	32.5	32.500	11,927	0.52377	5,113	5,113	5,113	31,940,209
	33.5	33.500	11,518	0.50446	5,113	5,113	5,113	29,707,777

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	34.5	34.500	11,108	0.48586	5,113	5,113	5,113	27,594,054
	35.5	35.500	10,696	0.46795	5,113	5,113	5,113	25,591,019
	36.5	36.500	10,284	0.45070	5,113	5,113	5,113	23,698,170
	37.5	37.500	9,873	0.43408	5,113	5,113	5,113	21,912,323
	38.5	38.500	9,463	0.41808	5,113	5,113	5,113	20,228,081
	39.5	39.500	9,053	0.40266	5,113	5,113	5,113	18,638,241
	40.5	40.500	8,654	0.38782	5,113	5,113	5,113	17,159,943
	41.5	41.500	8,054	0.37352	5,113	5,113	5,113	15,381,445
	42.5	42.500	7,835	0.35975	5,113	5,113	5,113	14,411,562
	43.5	43.500	7,435	0.34649	5,113	5,113	5,113	13,171,632
	44.5	44.500	7,038	0.33371	5,113	5,113	5,113	12,008,656
	45.5	45.500	6,645	0.32141	5,113	5,113	5,113	10,920,102
	46.5	46.500	6,257	0.30956	5,113	5,113	5,113	9,903,402
	47.5	47.500	5,876	0.29815	5,113	5,113	5,113	8,957,496
	48.5	48.500	5,502	0.28716	5,113	5,113	5,113	8,078,151
	49.5	49.500	5,134	0.27657	5,113	5,113	5,113	7,259,953
	50.5	50.500	4,775	0.26638	5,113	5,113	5,113	6,503,361
	51.5	51.500	4,425	0.25656	5,113	5,113	5,113	5,804,493
	52.5	52.500	4,085	0.24710	5,113	5,113	5,113	5,160,950
	53.5	53.500	3,759	0.23799	5,113	5,113	5,113	4,574,003
	54.5	54.500	3,442	0.22921	5,113	5,113	5,113	4,033,867
	55.5	55.500	3,138	0.22076	5,113	5,113	5,113	3,542,013
	56.5	56.500	2,848	0.21262	5,113	5,113	5,113	3,096,163
	57.5	57.500	2,572	0.20479	5,113	5,113	5,113	2,693,031
	58.5	58.500	2,310	0.19724	5,113	5,113	5,113	2,329,533
	59.5	59.500	2,063	0.18996	5,113	5,113	5,113	2,003,746
	60.5	60.500	1,832	0.18296	5,113	5,113	5,113	1,713,782
	61.5	61.500	1,615	0.17622	5,113	5,113	5,113	1,455,087
	62.5	62.500	1,415	0.16972	5,113	5,113	5,113	1,227,890

(9) Present value of all benefits paid from time 1 week to 62.5 years \$7,672,323,789

(10) Number disabled at 1 week 1,000,000

(11) Present Value of average total income benefits \$7,672

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%, and indexing annually at 7% from year 1 through year 27.5, 4.5% indexing thereafter.
- (5) Benefits amount for part-time workers.
- (6) Benefits amount for full-time workers.
- (7) Weighted average benefits for full- and part-time workers [Column (5) times 0.181 + Column (6) times 0.819].
- (8) Present value of payments for disabled wage earners during specified time period [Column (3) times Column (4) times Column (7)].
- (9) Sum of Column (8).
- (10) Column (3) at 1 week.
- (11) Line (9) divided by Line (10).

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Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590					
	2	0.005	1,182,720					
	3	0.008	1,135,411					
	4	0.011	1,095,672					
	5	0.014	1,062,802					
	6	0.016	1,036,231					
	7	0.019	1,015,507					
	8	0.022	1,000,000	1.0000	\$0	\$0	\$0	\$40.49
	9	0.025	988,169	0.9998	0	0	0	40.49
	10	0.027	975,780	0.9996	0	0	0	40.49
	11	0.030	962,743	0.9993	0	0	0	40.49
	12	0.033	948,956	0.9991	0	0	0	40.49
	13	0.036	934,311	0.9989	0	0	0	40.49
	14	0.038	918,747	0.9987	0	0	0	40.49
	15	0.041	902,351	0.9984	0	0	0	40.49
	16	0.044	885,441	0.9982	0	0	0	40.49
	17	0.047	868,503	0.9980	0	0	0	40.49
	18	0.049	852,015	0.9978	0	0	0	40.49
	19	0.052	836,290	0.9975	0	0	0	40.49
	20	0.055	821,406	0.9973	0	0	0	40.49
	21	0.058	807,271	0.9971	0	0	0	40.49
	22	0.060	793,766	0.9969	0	0	0	40.49
	23	0.063	780,876	0.9967	0	0	0	40.49
	24	0.066	768,734	0.9964	0	0	0	40.49
	25	0.068	757,600	0.9962	0	0	0	40.49
	26	0.071	747,797	0.9960	0	0	0	40.49
	27	0.074	739,664	0.9958	0	0	0	40.49
	28	0.077	738,105	0.9955	0	0	0	40.49
Weeks	4.5	0.086	734,041	0.9948	0	0	0	283.41
	5.5	0.105	687,923	0.9932	0	0	0	283.41
	6.5	0.125	598,120	0.9917	0	0	0	283.41
	7.5	0.144	542,608	0.9901	0	0	0	283.41
	8.5	0.163	498,142	0.9886	0	0	0	283.41
	9.5	0.182	460,058	0.9870	0	0	0	283.41
	10.5	0.201	427,115	0.9855	0	0	0	283.41
	11.5	0.221	398,368	0.9839	0	0	0	283.41
	12.5	0.240	373,065	0.9824	0	0	0	283.41
	13.5	0.259	350,615	0.9809	0	0	0	283.41
	14.5	0.278	330,561	0.9793	0	0	0	283.41
	15.5	0.297	312,485	0.9778	0	0	0	283.41
	16.5	0.316	296,124	0.9763	0	0	0	283.41
	17.5	0.336	281,300	0.9747	0	0	0	283.41
	18.5	0.355	267,818	0.9732	0	0	0	283.41
	19.5	0.374	255,516	0.9717	0	0	0	283.41
	20.5	0.393	244,256	0.9702	0	0	0	283.41
	21.5	0.412	233,910	0.9687	0	0	0	283.41
	22.5	0.432	224,355	0.9671	0	0	0	283.41
	23.5	0.451	215,475	0.9656	0	0	0	283.41
	24.5	0.470	207,168	0.9641	0	0	0	283.41
	25.5	0.489	199,352	0.9626	0	0	0	283.41
	26.5	0.508	191,273	0.9611	0	2,000	4,000	307.02
	27.5	0.527	183,135	0.9596	0	0	0	307.02

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	28.5	0.547	175,448	0.9581	0	0	0	4,307.02
	29.5	0.566	168,188	0.9566	0	0	0	307.02
	30.5	0.585	161,327	0.9551	0	0	0	307.02
	31.5	0.604	154,843	0.9536	0	0	0	307.02
	32.5	0.623	152,476	0.9521	0	0	0	307.02
	33.5	0.642	149,304	0.9506	0	0	0	307.02
	34.5	0.662	145,362	0.9491	0	0	0	307.02
	35.5	0.681	140,655	0.9477	0	0	0	307.02
	36.5	0.700	135,587	0.9462	0	0	0	307.02
	37.5	0.719	130,581	0.9447	0	0	0	307.02
	38.5	0.738	126,032	0.9432	0	0	0	307.02
	39.5	0.758	121,873	0.9418	0	0	0	307.02
	40.5	0.777	118,160	0.9403	0	0	0	307.02
	41.5	0.796	114,742	0.9388	0	0	0	307.02
	42.5	0.815	113,435	0.9373	0	0	0	307.02
	43.5	0.834	108,266	0.9359	0	0	0	307.02
	44.5	0.853	105,238	0.9344	0	0	0	307.02
	45.5	0.873	102,345	0.9330	0	0	0	307.02
	46.5	0.892	99,577	0.9315	0	0	0	307.02
	47.5	0.911	96,928	0.9300	0	0	0	307.02
	48.5	0.930	94,391	0.9286	0	0	0	307.02
	49.5	0.949	91,958	0.9271	0	0	0	307.02
	50.5	0.968	89,626	0.9257	0	0	0	307.02
	51.5	0.988	87,387	0.9242	0	0	0	307.02
Months	12.5	1.042	82,662	0.9616	0	0	0	1,330
	13.5	1.125	76,527	0.9551	0	0	0	1,330
	14.5	1.208	72,286	0.9486	0	0	0	1,330
	15.5	1.292	66,747	0.9422	0	0	0	1,330
	16.5	1.375	62,806	0.9358	0	0	0	1,330
	17.5	1.458	59,346	0.9294	0	0	0	1,330
	18.5	1.542	56,888	0.9231	0	2,000	9,620	1,330
	19.5	1.625	54,715	0.9169	0	0	0	1,330
	20.5	1.708	52,776	0.9107	0	0	0	1,330
	21.5	1.792	51,051	0.9045	0	0	0	1,330
	22.5	1.875	49,503	0.8984	0	0	0	1,330
	23.5	1.958	48,125	0.8923	0	0	0	1,330
	24.5	2.042	31,830	0.9261	0	0	0	1,330
	25.5	2.125	31,049	0.9199	0	0	0	1,330
	26.5	2.208	30,346	0.9136	0	0	0	1,330
	27.5	2.292	29,711	0.9074	0	0	0	1,330
	28.5	2.375	29,143	0.9013	0	0	0	1,330
	29.5	2.458	28,632	0.8952	0	0	0	1,330
	30.5	2.542	28,180	0.8891	2,000	2,000	9,620	1,433
	31.5	2.625	27,800	0.8831	0	0	0	1,433
	32.5	2.708	27,467	0.8771	0	0	0	1,433
	33.5	2.792	27,179	0.8712	0	0	0	1,433
	34.5	2.875	26,931	0.8653	0	0	0	1,433
	35.5	2.958	26,686	0.8594	0	0	0	1,433
	36.5	3.042	26,442	0.8920	0	0	0	1,433
	37.5	3.125	26,147	0.8859	0	0	0	1,433
	38.5	3.208	25,886	0.8799	0	0	0	1,433
	39.5	3.292	25,659	0.8740	0	0	0	1,433

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Months	40.5	3.375	25,465	0.8681	0	0	0	1,433
	41.5	3.458	25,295	0.8622	0	0	0	1,433
	42.5	3.542	25,103	0.8563	2,000	2,000	14,737	1,433
	43.5	3.625	24,937	0.8505	0	0	0	1,433
	44.5	3.708	24,797	0.8448	0	0	0	1,433
	45.5	3.792	24,654	0.8390	0	0	0	1,433
	46.5	3.875	24,522	0.8334	0	0	0	1,433
	47.5	3.958	24,404	0.8277	0	0	0	1,433
	48.5	4.042	24,245	0.8591	0	0	0	1,433
	49.5	4.125	24,102	0.8533	0	0	0	1,433
	50.5	4.208	23,968	0.8475	0	0	0	1,433
	51.5	4.292	23,843	0.8418	0	0	0	1,433
	52.5	4.375	23,726	0.8361	0	0	0	1,433
	53.5	4.458	23,619	0.8304	0	0	0	1,433
	54.5	4.542	23,537	0.8248	2,000	2,000	14,737	1,535
	55.5	4.625	23,461	0.8192	0	0	0	1,535
	56.5	4.708	23,391	0.8136	0	0	0	1,535
	57.5	4.792	23,321	0.8081	0	0	0	1,535
	58.5	4.875	23,263	0.8026	0	0	0	1,535
	59.5	4.958	23,206	0.7972	0	0	0	1,535
Years	5.5	5.500	23,149	0.7971	2,000	4,000	15,965	18,421
	6.5	6.500	22,543	0.7677	2,000	4,000	15,965	19,650
	7.5	7.500	22,053	0.7394	2,000	9,620	17,193	19,650
	8.5	8.500	21,570	0.7121	2,000	9,620	17,193	20,878
	9.5	9.500	21,119	0.6859	2,000	14,737	18,421	20,878
	10.5	10.500	20,668	0.6606	2,000	14,737	18,421	22,106
	11.5	11.500	20,240	0.6362	4,000	15,965	19,650	22,106
	12.5	12.500	19,825	0.6128	4,000	15,965	19,650	22,106
	13.5	13.500	19,420	0.5902	9,620	17,193	20,878	22,106
	14.5	14.500	19,022	0.5684	9,620	17,193	20,878	22,106
	15.5	15.500	18,629	0.5475	14,737	18,421	22,106	22,106
	16.5	16.500	18,240	0.5273	14,737	18,421	22,106	22,106
	17.5	17.500	17,854	0.5078	15,965	19,650	22,106	22,106
	18.5	18.500	17,470	0.4891	15,965	19,650	22,106	22,106
	19.5	19.500	17,085	0.4711	17,193	20,878	22,106	22,106
	20.5	20.500	16,699	0.4537	17,193	20,878	22,106	22,106
	21.5	21.500	16,313	0.4370	18,421	22,106	22,106	22,106
	22.5	22.500	15,925	0.4209	18,421	22,106	22,106	22,106
	23.5	23.500	15,536	0.4054	19,650	22,106	22,106	22,106
	24.5	24.500	15,143	0.3904	19,650	22,106	22,106	22,106
	25.5	25.500	14,748	0.3760	20,878	22,106	22,106	22,106
	26.5	26.500	14,350	0.3622	20,878	22,106	22,106	22,106
	27.5	27.500	13,952	0.3488	22,106	22,106	22,106	22,106
	28.5	28.500	13,550	0.3360	22,106	22,106	22,106	22,106
	29.5	29.500	13,147	0.3236	22,106	22,106	22,106	22,106
	30.5	30.500	12,742	0.3116	22,106	22,106	22,106	22,106
	31.5	31.500	12,335	0.3002	22,106	22,106	22,106	22,106
	32.5	32.500	11,927	0.2891	22,106	22,106	22,106	22,106
	33.5	33.500	11,518	0.2784	22,106	22,106	22,106	22,106
	34.5	34.500	11,108	0.2682	22,106	22,106	22,106	22,106
	35.5	35.500	10,696	0.2583	22,106	22,106	22,106	22,106
	36.5	36.500	10,284	0.2488	22,106	22,106	22,106	22,106

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	37.5	37.500	9,873	0.2396	22,106	22,106	22,106	22,106
	38.5	38.500	9,463	0.2308	22,106	22,106	22,106	22,106
	39.5	39.500	9,053	0.2222	22,106	22,106	22,106	22,106
	40.5	40.500	8,654	0.2141	22,106	22,106	22,106	22,106
	41.5	41.500	8,054	0.2062	22,106	22,106	22,106	22,106
	42.5	42.500	7,835	0.1986	22,106	22,106	22,106	22,106
	43.5	43.500	7,435	0.1912	22,106	22,106	22,106	22,106
	44.5	44.500	7,038	0.1842	22,106	22,106	22,106	22,106
	45.5	45.500	6,645	0.1774	22,106	22,106	22,106	15,474
	46.5	46.500	6,257	0.1709	22,106	22,106	22,106	15,474
	47.5	47.500	5,876	0.1646	22,106	22,106	22,106	15,474
	48.5	48.500	5,502	0.1585	22,106	22,106	22,106	15,474
	49.5	49.500	5,134	0.1527	22,106	22,106	22,106	15,474
	50.5	50.500	4,775	0.1470	22,106	22,106	15,474	15,474
	51.5	51.500	4,425	0.1416	22,106	22,106	15,474	15,474
	52.5	52.500	4,085	0.1364	22,106	22,106	15,474	15,474
	53.5	53.500	3,759	0.1314	22,106	22,106	15,474	15,474
	54.5	54.500	3,442	0.1265	22,106	22,106	15,474	15,474
	55.5	55.500	3,138	0.1218	22,106	22,106	15,474	15,474
	56.5	56.500	2,848	0.1174	22,106	22,106	15,474	15,474
	57.5	57.500	2,572	0.1130	22,106	22,106	15,474	15,474
	58.5	58.500	2,310	0.1089	22,106	22,106	15,474	15,474
	59.5	59.500	2,063	0.1048	22,106	22,106	15,474	15,474
	60.5	60.500	1,832	0.1010	22,106	22,106	15,474	15,474
	61.5	61.500	1,615	0.0973	22,106	22,106	15,474	15,474
	62.5	62.500	1,415	0.0937	15,474	15,474	15,474	15,474
	63.5	63.500	1,231	0.0902	15,474	15,474	15,474	15,474
	64.5	64.500	1,062	0.0869	15,474	15,474	15,474	15,474
	65.5	65.500	909	0.0837	15,474	15,474	15,474	15,474
	66.5	66.500	770	0.0806	15,474	15,474	15,474	15,474
	67.5	67.500	648	0.0776	15,474	15,474	15,474	15,474
	68.5	68.500	541	0.0748	15,474	15,474	15,474	15,474
	69.5	69.500	446	0.0720	15,474	15,474	15,474	15,474
	70.5	70.500	365	0.0694	15,474	15,474	15,474	15,474
	71.5	71.500	297	0.0668	15,474	15,474	15,474	15,474
	72.5	72.500	239	0.0643	15,474	15,474	15,474	15,474
	73.5	73.500	191	0.0620	15,474	15,474	15,474	15,474
	74.5	74.500	152	0.0597	15,474	15,474	15,474	15,474
	75.5	75.500	119	0.0575	15,474	15,474	15,474	15,474
	76.5	76.500	94	0.0554	15,474	15,474	15,474	15,474
	77.5	77.500	73	0.0533	15,474	15,474	15,474	15,474
	78.5	78.500	58	0.0514	15,474	15,474	15,474	15,474
	79.5	79.500	45	0.0495	15,474	15,474	15,474	15,474
	80.5	80.500	35	0.0476	15,474	15,474	15,474	15,474
	81.5	81.500	28	0.0459	15,474	15,474	15,474	0
	82.5	82.500	21	0.0442	15,474	15,474	15,474	0
	83.5	83.500	17	0.0426	15,474	15,474	15,474	0
	84.5	84.500	13	0.0410	15,474	15,474	15,474	0
	85.5	85.500	9	0.0395	15,474	15,474	0	0
	86.5	86.500	7	0.0380	15,474	15,474	0	0
	87.5	87.500	6	0.0366	15,474	15,474	0	0
	88.5	88.500	4	0.0353	15,474	15,474	0	0

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	89.5	89.500	3	0.0340	15,474	15,474	0	0
	90.5	90.500	2	0.0327	15,474	15,474	0	0
	91.5	91.500	1	0.0315	15,474	0	0	0
	92.5	92.500	1	0.0304	15,474	0	0	0
	93.5	93.500	1	0.0292	15,474	0	0	0
(9) Present Value of average total income benefits					\$3,539	\$5,441	\$7,971	\$12,930

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, starting with 1 million at 1 week.
- (4) Present value of \$1 paid assuming indexing of 4.5% per year and discount rate of 8.5%.
- (5) Indexed benefits amount for children not yet in elementary school at time of accident.
- (6) Indexed benefits amount for children in elementary school at time of accident.
- (7) Indexed benefits amount for children in secondary school at time of accident.
- (8) Indexed benefits amount for students in post-secondary education at time of accident.
- (9) Calculated using sum of [Column (3) times Column (4) times relevant benefits amount] divided by 1,000,000.

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		Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Present Value of \$1 without Indexing	Long-term Unemployed Benefits Amount	Medium-term Unemployed Benefits Amount	Short-term Unemployed Benefits Amount
		(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)
Days	1	0.003		1,292,590					
	2	0.005		1,182,720					
	3	0.008		1,135,411					
	4	0.011		1,095,672					
	5	0.014		1,062,802					
	6	0.016		1,036,231					
	7	0.019		1,015,507					
	8	0.022		1,000,000	1.00000	1.00000	\$26.43	\$26.43	\$60.73
	9	0.025		988,169	0.99978	0.99978	26.43	26.43	60.73
	10	0.027		975,780	0.99955	0.99955	26.43	26.43	60.73
	11	0.030		962,743	0.99933	0.99933	26.43	26.43	60.73
	12	0.033		948,956	0.99910	0.99910	26.43	26.43	60.73
	13	0.036		934,311	0.99888	0.99888	26.43	26.43	60.73
	14	0.038		918,747	0.99866	0.99866	26.43	26.43	60.73
	15	0.041		902,351	0.99844	0.99844	26.43	26.43	60.73
	16	0.044		885,441	0.99821	0.99821	26.43	26.43	60.73
	17	0.047		868,503	0.99799	0.99799	26.43	26.43	60.73
	18	0.049		852,015	0.99777	0.99777	26.43	26.43	60.73
	19	0.052		836,290	0.99754	0.99754	26.43	26.43	60.73
	20	0.055		821,406	0.99732	0.99732	26.43	26.43	60.73
	21	0.058		807,271	0.99710	0.99710	26.43	26.43	60.73
	22	0.060		793,766	0.99687	0.99687	26.43	26.43	60.73
	23	0.063		780,876	0.99665	0.99665	26.43	26.43	60.73
	24	0.066		768,734	0.99643	0.99643	26.43	26.43	60.73
	25	0.068		757,600	0.99621	0.99621	26.43	26.43	60.73
	26	0.071		747,797	0.99598	0.99598	26.43	26.43	60.73
	27	0.074		739,664	0.99576	0.99576	26.43	26.43	60.73
	28	0.077		738,105	0.99554	0.99554	26.43	26.43	60.73
Weeks	4.5	0.086		734,041	0.99476	0.99476	185.00	185.00	425.11
	5.5	0.105		687,923	0.99320	0.99320	185.00	185.00	425.11
	6.5	0.125		598,120	0.99165	0.99165	185.00	185.00	425.11
	7.5	0.144		542,608	0.99010	0.99010	185.00	185.00	425.11
	8.5	0.163		498,142	0.98855	0.98855	185.00	185.00	425.11
	9.5	0.182		460,058	0.98701	0.98701	185.00	185.00	425.11
	10.5	0.201		427,115	0.98547	0.98547	185.00	185.00	425.11
	11.5	0.221		398,368	0.98392	0.98392	185.00	185.00	425.11
	12.5	0.240		373,065	0.98239	0.98239	185.00	185.00	425.11
	13.5	0.259		350,615	0.98085	0.98085	185.00	185.00	425.11
	14.5	0.278		330,561	0.97932	0.97932	185.00	185.00	425.11
	15.5	0.297		312,485	0.97779	0.97779	185.00	185.00	425.11
	16.5	0.316		296,124	0.97626	0.97626	185.00	185.00	362.89
	17.5	0.336		281,300	0.97473	0.97473	185.00	185.00	362.89
	18.5	0.355		267,818	0.97321	0.97321	185.00	185.00	362.89
	19.5	0.374		255,516	0.97169	0.97169	185.00	185.00	362.89
	20.5	0.393		244,256	0.97017	0.97017	185.00	185.00	362.89
	21.5	0.412		233,910	0.96865	0.96865	185.00	185.00	362.89
	22.5	0.432		224,355	0.96714	0.96714	185.00	185.00	362.89
	23.5	0.451		215,475	0.96562	0.96562	185.00	185.00	362.89
	24.5	0.470		207,168	0.96411	0.96411	185.00	185.00	362.89
	25.5	0.489		199,352	0.96261	0.96261	185.00	185.00	362.89
	26.5	0.508		191,273	0.96110	0.96110	185.00	362.89	362.89
	27.5	0.527		183,135	0.95960	0.95960	185.00	362.89	362.89

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Present Value of \$1 without Indexing	Long-term Unemployed Benefits Amount	Medium-term Unemployed Benefits Amount	Short-term Unemployed Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)
Weeks	28.5	0.547	175,448	0.95810	0.95810	185.00	362.89	362.89
	29.5	0.566	168,188	0.95660	0.95660	185.00	362.89	362.89
	30.5	0.585	161,327	0.95511	0.95511	185.00	362.89	362.89
	31.5	0.604	154,843	0.95361	0.95361	185.00	362.89	362.89
	32.5	0.623	152,476	0.95212	0.95212	185.00	362.89	362.89
	33.5	0.642	149,304	0.95063	0.95063	185.00	362.89	362.89
	34.5	0.662	145,362	0.94915	0.94915	185.00	362.89	362.89
	35.5	0.681	140,655	0.94766	0.94766	185.00	362.89	362.89
	36.5	0.700	135,587	0.94618	0.94618	185.00	362.89	362.89
	37.5	0.719	130,581	0.94470	0.94470	185.00	362.89	362.89
	38.5	0.738	126,032	0.94323	0.94323	185.00	362.89	362.89
	39.5	0.758	121,873	0.94175	0.94175	185.00	362.89	362.89
	40.5	0.777	118,160	0.94028	0.94028	185.00	362.89	362.89
	41.5	0.796	114,742	0.93881	0.93881	185.00	362.89	362.89
	42.5	0.815	113,435	0.93734	0.93734	185.00	362.89	362.89
	43.5	0.834	108,266	0.93588	0.93588	185.00	362.89	362.89
	44.5	0.853	105,238	0.93441	0.93441	185.00	362.89	362.89
	45.5	0.873	102,345	0.93295	0.93295	185.00	362.89	362.89
	46.5	0.892	99,577	0.93149	0.93149	185.00	362.89	362.89
	47.5	0.911	96,928	0.93004	0.93004	185.00	362.89	362.89
	48.5	0.930	94,391	0.92858	0.92858	185.00	362.89	362.89
	49.5	0.949	91,958	0.92713	0.92713	185.00	362.89	362.89
	50.5	0.968	89,626	0.92568	0.92568	185.00	362.89	362.89
	51.5	0.988	87,387	0.92424	0.92424	185.00	362.89	362.89
Months	12.5	1.042	82,662	0.96158	0.92017	801	1,571	1,571
	13.5	1.125	76,527	0.95507	0.91394	801	1,571	1,571
	14.5	1.208	72,286	0.94860	0.90775	801	1,571	1,571
	15.5	1.292	66,747	0.94217	0.90160	801	1,571	1,571
	16.5	1.375	62,806	0.93579	0.89549	801	1,571	1,571
	17.5	1.458	59,346	0.92945	0.88942	801	1,571	1,571
	18.5	1.542	56,888	0.92315	0.88340	801	1,571	1,571
	19.5	1.625	54,715	0.91689	0.87741	801	1,571	1,571
	20.5	1.708	52,776	0.91068	0.87147	801	1,571	1,571
	21.5	1.792	51,051	0.90451	0.86556	801	1,571	1,571
	22.5	1.875	49,503	0.89838	0.85970	801	1,571	1,571
	23.5	1.958	48,125	0.89230	0.85387	801	1,571	1,571
	24.5	2.042	31,830	0.92613	0.84809	801	1,571	1,571
	25.5	2.125	31,049	0.91986	0.84234	801	1,571	1,571
	26.5	2.208	30,346	0.91362	0.83663	801	1,571	1,571
	27.5	2.292	29,711	0.90743	0.83097	801	1,571	1,571
	28.5	2.375	29,143	0.90129	0.82534	801	1,571	1,571
	29.5	2.458	28,632	0.89518	0.81974	801	1,571	1,571
	30.5	2.542	28,180	0.88911	0.81419	801	1,571	1,571
	31.5	2.625	27,800	0.88309	0.80867	801	1,571	1,571
	32.5	2.708	27,467	0.87711	0.80319	801	1,571	1,571
	33.5	2.792	27,179	0.87117	0.79775	801	1,571	1,571
	34.5	2.875	26,931	0.86526	0.79235	801	1,571	1,571
	35.5	2.958	26,686	0.85940	0.78698	801	1,571	1,571
	36.5	3.042	26,442	0.85359	0.78165	801	1,571	1,571
	37.5	3.125	26,147	0.84785	0.77635	801	1,571	1,571
	38.5	3.208	25,886	0.84216	0.77109	801	1,571	1,571
	39.5	3.292	25,659	0.83652	0.76587	801	1,571	1,571

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Present Value of \$1 without Indexing	Long-term Unemployed Benefits Amount	Medium-term Unemployed Benefits Amount	Short-term Unemployed Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)
Months	40.5	3.375	25,465	0.86806	0.76068	801	1,571	1,571
	41.5	3.458	25,295	0.86218	0.75552	801	1,571	1,571
	42.5	3.542	25,103	0.85634	0.75040	801	1,571	1,571
	43.5	3.625	24,937	0.85053	0.74532	801	1,571	1,571
	44.5	3.708	24,797	0.84477	0.74027	801	1,571	1,571
	45.5	3.792	24,654	0.83905	0.73526	801	1,571	1,571
	46.5	3.875	24,522	0.83336	0.73027	801	1,571	1,571
	47.5	3.958	24,404	0.82772	0.72533	801	1,571	1,571
	48.5	4.042	24,245	0.85910	0.72041	801	1,571	1,571
	49.5	4.125	24,102	0.85328	0.71553	801	1,571	1,571
	50.5	4.208	23,968	0.84750	0.71068	801	1,571	1,571
	51.5	4.292	23,843	0.84176	0.70587	801	1,571	1,571
	52.5	4.375	23,726	0.83606	0.70109	801	1,571	1,571
	53.5	4.458	23,619	0.83039	0.69634	801	1,571	1,571
	54.5	4.542	23,537	0.82477	0.69162	801	1,571	1,571
	55.5	4.625	23,461	0.81918	0.68693	801	1,571	1,571
	56.5	4.708	23,391	0.81363	0.68228	801	1,571	1,571
	57.5	4.792	23,321	0.80812	0.67765	801	1,571	1,571
	58.5	4.875	23,263	0.80264	0.67306	801	1,571	1,571
	59.5	4.958	23,206	0.79720	0.66850	801	1,571	1,571
Years	5.5	5.500	23,149	0.79707	0.63961	9,620	18,870	18,870
	6.5	6.500	22,543	0.76768	0.58950	9,620	18,870	18,870
	7.5	7.500	22,053	0.73938	0.54332	9,620	18,870	18,870
	8.5	8.500	21,570	0.71212	0.50075	9,620	18,870	18,870
	9.5	9.500	21,119	0.68587	0.46152	9,620	18,870	18,870
	10.5	10.500	20,668	0.66058	0.42537	9,620	18,870	18,870
	11.5	11.500	20,240	0.63623	0.39204	9,620	18,870	18,870
	12.5	12.500	19,825	0.61277	0.36133	9,620	18,870	18,870
	13.5	13.500	19,420	0.59018	0.33302	9,620	18,870	18,870
	14.5	14.500	19,022	0.56842	0.30693	9,620	18,870	18,870
	15.5	15.500	18,629	0.54747	0.28289	9,620	18,870	18,870
	16.5	16.500	18,240	0.52729	0.26073	9,620	18,870	18,870
	17.5	17.500	17,854	0.50785	0.24030	9,620	18,870	18,870
	18.5	18.500	17,470	0.48912	0.22148	9,620	18,870	18,870
	19.5	19.500	17,085	0.47109	0.20412	9,620	18,870	18,870
	20.5	20.500	16,699	0.45372	0.18813	9,620	18,870	18,870
	21.5	21.500	16,313	0.43700	0.17339	9,620	18,870	18,870
	22.5	22.500	15,925	0.42089	0.15981	9,620	18,870	18,870
	23.5	23.500	15,536	0.40537	0.14729	9,620	18,870	18,870
	24.5	24.500	15,143	0.39043	0.13575	9,620	18,870	18,870
	25.5	25.500	14,748	0.37603	0.12512	9,620	18,870	18,870
	26.5	26.500	14,350	0.36217	0.11532	9,620	18,870	18,870
	27.5	27.500	13,952	0.34882	0.10628	9,620	18,870	18,870
	28.5	28.500	13,550	0.33596	0.09796	9,620	10,001	10,001
	29.5	29.500	13,147	0.32357	0.09028	9,620	10,001	10,001
	30.5	30.500	12,742	0.31164	0.08321	9,620	10,001	10,001
	31.5	31.500	12,335	0.30015	0.07669	9,620	10,001	10,001
	32.5	32.500	11,927	0.28909	0.07068	9,620	10,001	10,001
	33.5	33.500	11,518	0.27843	0.06514	9,620	10,001	10,001
	34.5	34.500	11,108	0.26817	0.06004	9,620	10,001	10,001
	35.5	35.500	10,696	0.25828	0.05534	9,620	10,001	10,001
	36.5	36.500	10,284	0.24876	0.05100	9,620	10,001	10,001

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Present Value of \$1 without Indexing	Long-term Unemployed Benefits Amount	Medium-term Unemployed Benefits Amount	Short-term Unemployed Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)
Years	37.5	37.500	9,873	0.23959	0.04701	9,620	10,001	10,001
	38.5	38.500	9,463	0.23075	0.04332	9,620	10,001	10,001
	39.5	39.500	9,053	0.22225	0.03993	9,620	10,001	10,001
	40.5	40.500	8,654	0.21405	0.03680	9,620	10,001	10,001
	41.5	41.500	8,054	0.20616	0.03392	9,620	10,001	10,001
	42.5	42.500	7,835	0.19856	0.03126	9,620	10,001	10,001
	43.5	43.500	7,435	0.19124	0.02881	9,620	10,001	10,001
	44.5	44.500	7,038	0.18419	0.02656	9,620	10,001	10,001
	45.5	45.500	6,645	0.17740	0.02448	9,620	10,001	10,001
	46.5	46.500	6,257	0.17086	0.02256	9,620	10,001	10,001
	47.5	47.500	5,876	0.16456	0.02079	9,620	10,001	10,001
	48.5	48.500	5,502	0.15849	0.01916	9,620	10,001	10,001
	49.5	49.500	5,134	0.15265	0.01766	9,620	10,001	10,001
	50.5	50.500	4,775	0.14702	0.01628	9,620	10,001	10,001
	51.5	51.500	4,425	0.14160	0.01500	9,620	10,001	10,001
	52.5	52.500	4,085	0.13638	0.01383	9,620	10,001	10,001
	53.5	53.500	3,759	0.13136	0.01274	9,620	10,001	10,001
	54.5	54.500	3,442	0.12651	0.01175	9,620	10,001	10,001
	55.5	55.500	3,138	0.12185	0.01082	9,620	10,001	10,001
	56.5	56.500	2,848	0.11736	0.00998	9,620	10,001	10,001
	57.5	57.500	2,572	0.11303	0.00920	9,620	10,001	10,001
	58.5	58.500	2,310	0.10886	0.00847	9,620	10,001	10,001
	59.5	59.500	2,063	0.10485	0.00781	9,620	10,001	10,001
	60.5	60.500	1,832	0.10098	0.00720	9,620	10,001	10,001
	61.5	61.500	1,615	0.09726	0.00664	9,620	10,001	10,001
	62.5	62.500	1,415	0.09368	0.00612	9,620	10,001	10,001

(14) Present Value of average total income benefits	\$5,053	\$10,479	\$12,869
(15) Unemployed	\$12,272		
(16) Retired	\$4,376		

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, starting with 1 million at 1 week.
- (4) Present value of \$1 paid assuming indexing of 4.5% per year and discount rate of 8.5%.
- (10) Present value of \$1 paid assuming no indexing and a discount rate of 8.5% (used for long term unemployed).
- (11) Benefits amount for persons long-term (more than 3 years) unemployed at time of accident.
- (12) Indexed benefits amount for persons medium-term (6 months to 3 years) unemployed at time of accident.
- (13) Indexed benefits amount for persons short-term (less than 6 months) unemployed at time of accident.
- (14) Calculated using sum of [Column (3) times Column (4) times relevant benefits amount] divided by 1,000,000.
Note that long-term unemployed uses Column (10) instead of Column (4).
- (15) Unemployed benefits amount, equal to 75% of (14) for short-term unemployed and 25% of (14) for medium-term unemployed.
- (16) Benefits amount for retired persons, equal to the sum of [Column (3) x Column (10) x Column (11)] for 1 week through 11.5 years.

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Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Percent Value of \$1 Indexed	Temporarily Unemployed Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
(1)	(2)	(3)	(4)	(17)	(18)	(19)
Days	1	0.003	1,292,590	1.0000		
	2	0.005	1,182,720	1.0000		
	3	0.008	1,135,411	1.0000		
	4	0.011	1,095,672	1.0000		
	5	0.014	1,062,802	1.0000		
	6	0.016	1,036,231	1.0000		
	7	0.019	1,015,507	1.0000		
	8	0.022	1,000,000	1.0000	\$26.43	\$3.40
	9	0.025	988,169	0.9998	26.43	3.40
	10	0.027	975,780	0.9996	26.43	3.40
	11	0.030	962,743	0.9993	26.43	3.40
	12	0.033	948,956	0.9991	26.43	3.40
	13	0.036	934,311	0.9989	26.43	3.40
	14	0.038	918,747	0.9987	26.43	3.40
	15	0.041	902,351	0.9984	26.43	3.40
	16	0.044	885,441	0.9982	26.43	3.40
	17	0.047	868,503	0.9980	26.43	3.40
	18	0.049	852,015	0.9978	26.43	3.40
	19	0.052	836,290	0.9975	26.43	3.40
	20	0.055	821,406	0.9973	26.43	3.40
	21	0.058	807,271	0.9971	26.43	3.40
	22	0.060	793,766	0.9969	26.43	3.40
	23	0.063	780,876	0.9967	26.43	3.40
	24	0.066	768,734	0.9964	26.43	3.40
	25	0.068	757,600	0.9962	26.43	3.40
	26	0.071	747,797	0.9960	26.43	3.40
	27	0.074	739,664	0.9958	26.43	3.40
	28	0.077	738,105	0.9955	26.43	3.40
Weeks	4.5	0.086	734,041	0.9948	185.00	23.78
	5.5	0.105	687,923	0.9932	185.00	23.78
	6.5	0.125	598,120	0.9917	185.00	23.78
	7.5	0.144	542,608	0.9901	185.00	23.78
	8.5	0.163	498,142	0.9886	185.00	23.78
	9.5	0.182	460,058	0.9870	185.00	23.78
	10.5	0.201	427,115	0.9855	185.00	23.78
	11.5	0.221	398,368	0.9839	185.00	23.78
	12.5	0.240	373,065	0.9824	185.00	23.78
	13.5	0.259	350,615	0.9809	185.00	23.78
	14.5	0.278	330,561	0.9793	185.00	23.78
	15.5	0.297	312,485	0.9778	185.00	23.78
	16.5	0.316	296,124	0.9763	185.00	23.78
	17.5	0.336	281,300	0.9747	185.00	23.78
	18.5	0.355	267,818	0.9732	185.00	23.78
	19.5	0.374	255,516	0.9717	185.00	23.78
	20.5	0.393	244,256	0.9702	185.00	23.78
	21.5	0.412	233,910	0.9687	185.00	23.78
	22.5	0.432	224,355	0.9671	185.00	23.78
	23.5	0.451	215,475	0.9656	185.00	23.78
	24.5	0.470	207,168	0.9641	185.00	23.78
	25.5	0.489	199,352	0.9626	185.00	23.78
	26.5	0.508	191,273	0.9611	255.77	23.78
	27.5	0.527	183,135	0.9596	255.77	23.78

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	Length of		Number	Present	Temporarily	Employed	Caregiver
	Time	Time			Unemployed	Child Care	Child Care
	Disabled	Disabled	Disabled	Value of \$1	Primary	Benefits	Benefits
	(1)	(2)	(3)	(4)	Amount	Amount	Amount
Weeks					(17)	(18)	(19)
	28.5	0.547	175,448	0.9581	255.77	23.78	234.05
	29.5	0.566	168,188	0.9566	255.77	23.78	234.05
	30.5	0.585	161,327	0.9551	255.77	23.78	234.05
	31.5	0.604	154,843	0.9536	255.77	23.78	234.05
	32.5	0.623	152,476	0.9521	255.77	23.78	234.05
	33.5	0.642	149,304	0.9506	255.77	23.78	234.05
	34.5	0.662	145,362	0.9491	255.77	23.78	234.05
	35.5	0.681	140,655	0.9477	255.77	23.78	234.05
	36.5	0.700	135,587	0.9462	255.77	23.78	234.05
	37.5	0.719	130,581	0.9447	255.77	23.78	234.05
	38.5	0.738	126,032	0.9432	255.77	23.78	234.05
	39.5	0.758	121,873	0.9418	255.77	23.78	234.05
	40.5	0.777	118,160	0.9403	255.77	23.78	234.05
	41.5	0.796	114,742	0.9388	255.77	23.78	234.05
	42.5	0.815	113,435	0.9373	255.77	23.78	234.05
	43.5	0.834	108,266	0.9359	255.77	23.78	234.05
	44.5	0.853	105,238	0.9344	255.77	23.78	234.05
	45.5	0.873	102,345	0.9330	255.77	23.78	234.05
	46.5	0.892	99,577	0.9315	255.77	23.78	234.05
	47.5	0.911	96,928	0.9300	255.77	23.78	234.05
	48.5	0.930	94,391	0.9286	255.77	23.78	234.05
	49.5	0.949	91,958	0.9271	255.77	23.78	234.05
	50.5	0.968	89,626	0.9257	255.77	23.78	234.05
	51.5	0.988	87,387	0.9242	255.77	23.78	234.05
Months							
	12.5	1.042	82,662	0.9616	1,107	103	1,013
	13.5	1.125	76,527	0.9551	1,107	103	1,013
	14.5	1.208	72,286	0.9486	1,107	103	1,013
	15.5	1.292	66,747	0.9422	1,107	103	1,013
	16.5	1.375	62,806	0.9358	1,107	103	1,013
	17.5	1.458	59,346	0.9294	1,107	103	1,013
	18.5	1.542	56,888	0.9231	1,107	103	1,013
	19.5	1.625	54,715	0.9169	1,107	103	1,013
	20.5	1.708	52,776	0.9107	1,107	103	1,013
	21.5	1.792	51,051	0.9045	1,107	103	1,013
	22.5	1.875	49,503	0.8984	1,107	103	1,013
	23.5	1.958	48,125	0.8923	1,107	103	1,013
	24.5	2.042	31,830	0.9261	1,107	103	1,013
	25.5	2.125	31,049	0.9199	1,107	103	1,013
	26.5	2.208	30,346	0.9136	1,107	103	1,013
	27.5	2.292	29,711	0.9074	1,107	103	1,013
	28.5	2.375	29,143	0.9013	1,107	103	1,013
	29.5	2.458	28,632	0.8952	1,107	103	1,013
	30.5	2.542	28,180	0.8891	1,107	103	1,013
	31.5	2.625	27,800	0.8831	1,107	103	1,013
	32.5	2.708	27,467	0.8771	1,107	103	1,013
	33.5	2.792	27,179	0.8712	1,107	103	1,013
	34.5	2.875	26,931	0.8653	1,107	103	1,013
	35.5	2.958	26,686	0.8594	1,107	103	1,013
	36.5	3.042	26,442	0.8535	1,107	103	1,013
	37.5	3.125	26,147	0.8476	1,107	103	1,013
	38.5	3.208	25,886	0.8417	1,107	103	1,013
	39.5	3.292	25,659	0.8358	1,107	103	1,013

Technical Appendix
Total Income Benefits Costs - The Road Ahead
Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Temporarily Unemployed Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
	(1)	(2)	(3)	(4)	(17)	(18)	(19)
Months	40.5	3.375	25,465	0.8681	1,107	103	1,013
	41.5	3.458	25,295	0.8622	1,107	103	1,013
	42.5	3.542	25,103	0.8563	1,107	103	1,013
	43.5	3.625	24,937	0.8505	1,107	103	1,013
	44.5	3.708	24,797	0.8448	1,107	103	1,013
	45.5	3.792	24,654	0.8390	1,107	103	1,013
	46.5	3.875	24,522	0.8334	1,107	103	1,013
	47.5	3.958	24,404	0.8277	1,107	103	1,013
	48.5	4.042	24,245	0.8591	1,107	103	1,013
	49.5	4.125	24,102	0.8533	1,107	103	1,013
	50.5	4.208	23,968	0.8475	1,107	103	1,013
	51.5	4.292	23,843	0.8418	1,107	103	1,013
	52.5	4.375	23,726	0.8361	1,107	103	1,013
	53.5	4.458	23,619	0.8304	1,107	103	1,013
	54.5	4.542	23,537	0.8248	1,107	103	1,013
	55.5	4.625	23,461	0.8192	1,107	103	1,013
	56.5	4.708	23,391	0.8136	1,107	103	1,013
	57.5	4.792	23,321	0.8081	1,107	103	1,013
	58.5	4.875	23,263	0.8026	1,107	103	1,013
	59.5	4.958	23,206	0.7972	1,107	103	1,013
Years	5.5	5.500	23,149	0.7971	13,300	1,237	12,171
	6.5	6.500	22,543	0.7677	13,300	1,237	12,171
	7.5	7.500	22,053	0.7394	13,300	1,237	12,171
	8.5	8.500	21,570	0.7121	13,300	1,237	12,171
	9.5	9.500	21,119	0.6859	18,870	0	0
	10.5	10.500	20,668	0.6606	18,870	0	0
	11.5	11.500	20,240	0.6362	18,870	0	0
	12.5	12.500	19,825	0.6128	18,870	0	0
	13.5	13.500	19,420	0.5902	18,870	0	0
	14.5	14.500	19,022	0.5684	18,870	0	0
	15.5	15.500	18,629	0.5475	18,870	0	0
	16.5	16.500	18,240	0.5273	18,870	0	0
	17.5	17.500	17,854	0.5078	18,870	0	0
	18.5	18.500	17,470	0.4891	18,870	0	0
	19.5	19.500	17,085	0.4711	18,870	0	0
	20.5	20.500	16,699	0.4537	18,870	0	0
	21.5	21.500	16,313	0.4370	18,870	0	0
	22.5	22.500	15,925	0.4209	18,870	0	0
	23.5	23.500	15,536	0.4054	18,870	0	0
	24.5	24.500	15,143	0.3904	18,870	0	0
	25.5	25.500	14,748	0.3760	18,870	0	0
	26.5	26.500	14,350	0.3622	18,870	0	0
	27.5	27.500	13,952	0.3488	18,870	0	0
	28.5	28.500	13,550	0.3360	10,001	0	0
	29.5	29.500	13,147	0.3236	10,001	0	0
	30.5	30.500	12,742	0.3116	10,001	0	0
	31.5	31.500	12,335	0.3002	10,001	0	0
	32.5	32.500	11,927	0.2891	10,001	0	0
	33.5	33.500	11,518	0.2784	10,001	0	0
	34.5	34.500	11,108	0.2682	10,001	0	0
	35.5	35.500	10,696	0.2583	10,001	0	0
	36.5	36.500	10,284	0.2488	10,001	0	0

Technical Appendix
Total Income Benefits Costs - The Road Ahead
Non-wage Earners

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Non-wage Earners				Temporarily Unemployed	Page 13 of 13		
Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount	
(1)	(2)	(3)	(4)	(17)	(18)	(19)	
Years	37.5	37,500	9,873	0.2396	10,001	0	0
	38.5	38,500	9,463	0.2308	10,001	0	0
	39.5	39,500	9,053	0.2222	10,001	0	0
	40.5	40,500	8,654	0.2141	10,001	0	0
	41.5	41,500	8,054	0.2062	10,001	0	0
	42.5	42,500	7,835	0.1986	10,001	0	0
	43.5	43,500	7,435	0.1912	10,001	0	0
	44.5	44,500	7,038	0.1842	10,001	0	0
	45.5	45,500	6,645	0.1774	10,001	0	0
	46.5	46,500	6,257	0.1709	10,001	0	0
	47.5	47,500	5,876	0.1646	10,001	0	0
	48.5	48,500	5,502	0.1585	10,001	0	0
	49.5	49,500	5,134	0.1527	10,001	0	0
	50.5	50,500	4,775	0.1470	10,001	0	0
	51.5	51,500	4,425	0.1416	10,001	0	0
	52.5	52,500	4,085	0.1364	10,001	0	0
	53.5	53,500	3,759	0.1314	10,001	0	0
	54.5	54,500	3,442	0.1265	10,001	0	0
	55.5	55,500	3,138	0.1218	10,001	0	0
	56.5	56,500	2,848	0.1174	10,001	0	0
	57.5	57,500	2,572	0.1130	10,001	0	0
	58.5	58,500	2,310	0.1089	10,001	0	0
	59.5	59,500	2,063	0.1048	10,001	0	0
	60.5	60,500	1,832	0.1010	10,001	0	0
	61.5	61,500	1,615	0.0973	10,001	0	0
	62.5	62,500	1,415	0.0937	10,001	0	0

(20) Present Value of average total income benefits	\$9,074	\$563	\$6,204
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(21) Present Value of average Primary Caregiver total income benefits	\$7,064
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Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, starting with 1 million at 1 week.
- (4) Present value of \$1 paid assuming indexing of 4.5% per year and discount rate of 8.5%.
- (17) Indexed benefits amount for temporarily unemployed caregivers at time of accident.
- (18) Indexed child care benefits amount for persons employed at time of accident.
- (19) Indexed child care benefits amount for caregivers at time of accident.
- (20) Calculated using sum of [Column (3) times Column (4) times relevant benefits amount] divided by 1,000,000.
- (21) Calculated as 50% of Column (17) total plus 50% of Column (11) total (page 9 of this exhibit).

Technical Appendix
Average Child Care Benefits
Per Disabled Wage Earner

Appendix 6
Exhibit 11
Page 1 of 4

Wage Earner Marital Status	Number of Families (1)	Number of Wage Earners Per Family (2)	Total Number of Wage Earners (3)	Child Care Benefits per Disabled Wage Earner (4)
Married - 2 wage earners				
a. w/ kids	829,848	2	1,659,697	
b. w/out kids	694,046	2	<u>1,388,093</u>	
Subtotal			3,047,789	\$30.90
Married-1 wage earner				
a. w/ kids	428,309	1	428,309	
b. w/out kids	81,653	1	<u>81,653</u>	
Subtotal			509,961	\$0.00
Single-1 wage earner w/ kids	194,806	1	194,806	\$90.33
Single-1 wage earner w/out kids			948,444	\$0.00

Average Child Care Benefits per Disabled Wage Earner

\$23.78

Notes:

- (1) From Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario, Number 1 and 1986 Ontario Census.
- (3) Column (1) x Column (2).
- (4) From Page 2, lines (5) and (9) of this exhibit.
- (5) Weighted benefits amount by total number of wage earners.

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Technical Appendix
Average Child Care Benefits
Per Disabled Wage Earner

Appendix 6
Exhibit 11
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Derivation of Average Benefits per Disabled Wage Earner by Category

<u>Number of 2 Parent Families With</u>		<u>Maximum</u> <u>Benefits</u> <u>Amount</u>	<u>Incurred</u> <u>Benefits</u> <u>Amount</u>	<u>Total</u> <u>Payments</u>
(1)		(2)	(3)	(4)
0 kids	816,525	\$0	\$0.00	\$0
1 kid	464,950	75.00	37.50	17,435,625
2 kids	577,360	100.00	50.00	28,868,000
3 kids + (Avg of 3.5)	<u>296,155</u>	<u>137.00</u>	<u>68.50</u>	<u>20,286,618</u>
Totals	2,154,990			\$66,590,243
(5) Average Benefits Per 2 Parent Family				\$30.90

<u>Number of</u> <u>Single Parent Families With Kids</u>		<u>Benefits</u> <u>Amount</u>	<u>Total</u> <u>Payments</u>
(6)		(7)	(8)
1 kid	165,845	\$75.00	\$12,438,375
2 kids	88,810	100.00	8,881,000
3 kids + (Avg of 3.5)	<u>36,100</u>	<u>137.00</u>	<u>4,945,700</u>
Totals	290,755		\$26,265,075
(9) Average Benefits Per Single Parent			\$90.33

Notes:

(1) & (6) From 1986 Ontario Census.

(2) & (7) From Appendix 11.

(3) Column (2) x 0.5.

(4) Column (1) x Column (3).

(5) Column (4) total / Column (1) total.

(8) Column (6) x Column (7).

(9) Column (8) total / Column (7) total.

Technical Appendix
Average Child Care Benefits
Per Disabled Caregiver

Appendix 6
Exhibit 11
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<u>Caregiver Marital Status</u>	<u>Number of Families</u> (1)	<u>Number of Caregivers Per Family</u> (2)	<u>Total Number of Caregivers</u> (3)	<u>Child Care Benefits per Disabled Caregiver</u> (4)
Married-1 Caregiver	428,309	1	428,309	\$299.23
Married-2 Caregivers	80,308	2	160,616	299.23
Single-1 Caregiver	95,949	1	95,949	280.79

Average Child Care Benefits per Disabled Caregiver

\$296.64

Notes:

- (1) From Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario, Number 1 and 1986 Ontario Census.
- (3) Column (1) x Column (2).
- (4) From Page 4, lines (4) and (8) of this exhibit.

Technical Appendix
Average Child Care Benefits
Per Disabled Caregiver

Appendix 6
Exhibit 11
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Derivation of Average Benefits per Disabled Caregiver by Category

<u>Number of 2 Parent Families With</u>		<u>Benefits</u>	<u>Total</u>
(1)		<u>Amount</u>	<u>Payments</u>
		(2)	(3)
1 kid	464,950	\$250.00	\$116,237,500
2 kids	577,360	300.00	173,208,000
3 kids + (Avg of 3.5)	<u>296,155</u>	<u>375.00</u>	<u>111,058,125</u>
Totals	1,338,465		\$400,503,625
(4) Average Benefits Per 2 Parent Family w/ kids			\$299.23

<u>Number of Single Parent Families With Kids</u>		<u>Benefits</u>	<u>Total</u>
(5)		<u>Amount</u>	<u>Payments</u>
		(6)	(7)
1 kid	165,845	\$250.00	\$41,461,250
2 kids	88,810	300.00	26,643,000
3 kids + (Avg of 3.5)	<u>36,100</u>	<u>375.00</u>	<u>13,537,500</u>
Totals	290,755		\$81,641,750
(8) Average Benefits Per Single Parent			\$280.79

Notes:

- (1) & (5) From 1986 Ontario Census.
- (2) & (6) From Appendix 11.
- (3) Column (1) x Column (2).
- (4) Column (3) total / Column (1) total.
- (7) Column (5) x Column (6).
- (8) Column (7) total / Column (6) total.

Technical Appendix
Calculation of 7.0% Inflation Rate Used
To Index TRA Wage Earner Benefits Through Age 65

Appendix 6
Exhibit 12
Page 1 of 1

<u>Year</u>	<u>Average Net Wage</u> (1)	<u>Average Road Ahead Benefits*</u> (2)	<u>Annual % change In Average Benefits</u> (3)	<u>Cumulative % change In Average Benefits</u> (4)	<u>Equivalent Average Annual Change in Benefits</u> (5)
1	\$614.00	\$178.00			
2	641.63	189.00	6.2%	6.2%	6.2%
3	670.50	201.00	6.3%	12.9%	6.3%
4	700.68	214.00	6.5%	20.2%	6.3%
5	732.21	230.00	7.5%	29.2%	6.6%
6	765.16	249.00	8.3%	39.9%	6.9%
7	799.59	269.00	8.0%	51.1%	7.1%
8	835.57	291.00	8.2%	63.5%	7.3%
9	873.17	313.00	7.6%	75.8%	7.3%
10	912.46	337.00	7.7%	89.3%	7.3%
11	953.52	361.00	7.1%	102.8%	7.3%
12	996.43	386.00	6.9%	116.9%	7.3%
13	1,041.27	413.00	7.0%	132.0%	7.3%
14	1,088.13	441.00	6.8%	147.8%	7.2%
15	1,137.09	470.00	6.6%	164.0%	7.2%
16	1,188.26	500.00	6.4%	180.9%	7.1%
17	1,241.74	531.00	6.2%	198.3%	7.1%
18	1,297.61	564.00	6.2%	216.9%	7.0%
19	1,356.01	597.00	5.9%	235.4%	7.0%
20	1,417.03	633.00	6.0%	255.6%	6.9%
21	1,480.79	671.00	6.0%	277.0%	6.9%
22	1,547.43	709.00	5.7%	298.3%	6.8%
23	1,617.06	750.00	5.8%	321.3%	6.8%
24	1,689.83	792.00	5.6%	344.9%	6.7%
25	1,765.87	836.00	5.6%	369.7%	6.7%
26	1,845.34	882.00	5.5%	395.5%	6.6%
27	1,928.38	929.00	5.3%	421.9%	6.6%
28	2,015.15	979.00	5.4%	450.0%	6.5%
29	2,105.84	1,031.00	5.3%	479.2%	6.5%
30	2,200.60	1,085.00	5.2%	509.6%	6.4%

Weighted Average	6.9%
Selected	7.0%

Notes:

* Includes private income benefits plan and CPP disability plan offsets.

(1) Year 1: From Exhibit 8, Column (4).

Years 2 through 30: Prior Year (1) x 1.045.

(2) Year 1: From Exhibit 8, page 1, Column (9).

Years 2 through 30: Calculated from Exhibit 8 by trending to 1/1/94 for year 2, 1/1/95 for year 3, etc.

(3) [Current Year (2) / Prior Year (2)] - 1

(4) [Current Year (2) / Year 1 (2)] - 1

(5) [1 + (4)] * [(1 / (year-1))] - 1

Technical Appendix
Relative Income Benefits Loss Costs
TRA Primary

Appendix 6
Exhibit 13
Page 1 of 1

Income Benefits Category	Population By Category	Relative Accident Frequency By Category	Claim Frequency Adjustment for Utilization		Present Value of Total Income Benefits Costs		
			TRA	TRA Primary	Pre-OMPP	TRA	TRA Primary
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Employed	51.6%	1.00	1.100	1.139	\$2,512	\$7,672	\$13,993
Unemployed	4.0%	1.00	1.000	1.000	1,256	12,272	12,272
Pre-School	6.9%	0.25	1.000	1.000	0	3,539	3,539
Elementary School	12.2%	0.45	1.000	1.000	0	5,441	5,441
Secondary School	5.9%	1.00	1.000	1.000	0	7,971	7,971
Post-Secondary School	3.3%	1.70	1.000	1.000	0	12,930	12,930
Caregivers	7.5%	1.00	1.000	1.000	559	7,064	7,064
All Other	1.0%	1.00	1.000	1.000	559	5,053	5,053
Retired	10.7%	0.40	1.000	1.000	0	4,376	4,376
Child Care-Caregivers	7.5%	1.00	1.000	1.000	0	6,204	6,204
Child Care-Employed	51.6%	1.00	1.000	1.000	0	563	563
(A) Totals					\$1,394	\$7,924	\$11,790
(B) Adjustment Ratios						5.685	8.458
(C) Pre-OMPP Baseline Income Benefits Loss Costs					\$21.26	\$19.89	\$19.89
(D) Relative Income Benefits Loss Costs					<u>\$21.26</u>	<u>\$113.07</u>	<u>\$168.23</u>

Notes:

- (2) Estimated from 1986 Ontario Census data and from "Statistics Canada," November 1990.
- (3) From Exhibit 2, line (11).
- (4) Assumed increases in utilization due to availability of higher benefit levels under TRA.
- (5) Employed factor accounts for: 1) additional utilization due to availability of higher benefit levels under TRA; and 2) additional claimants that were fully compensated by a private income benefits plan and therefore received no benefits under Pre-OMPP, which is secondary to such plans.
- (6) From Exhibit 4, Page 4, lines (11) and (12).
- (7) From Exhibit 6, Page 4 and Exhibit 7, Page 5.
- (8) From Exhibit 9, Page 4 and Exhibit 10, Pages 5, 9, and 13.
- (A) $6(A) = \text{The sum of } (2) \times (3) \times (6).$
 $7(A) = \text{The sum of } (2) \times (3) \times (4) \times (7).$
 $8(A) = \text{The sum of } (2) \times (3) \times (4) \times (8).$
- (B) $7(B) = 7(A) / 6(A)$
 $8(B) = 8(A) / 6(A)$
- (C) Adjusted baseline loss costs from Actuarial Report, Section 5, Subsection 2.
- (D) $6(D) = 6(C).$
 $7(D) = 7(C) \times 7(B).$
 $8(D) = 8(C) \times 8(B).$

Technical Appendix
Calculation of TRA Weekly
Income Replacement Benefits
TRA Primary

Appendix 6
Exhibit 14
Page 1 of 2

1989 Estimated Annual Income	Esti- mated Income Distri- bution	7/1/93 Estimated Annual Income	7/1/93 Estimated Gross Weekly Income	7/1/93 Estimated Net Weekly Income	Estimated CPP Disability Pension	TRA Weekly IRB	
						TRA Primary	With CPP Disability Offset Only
(1)	(2)	(3)	(4)	(5)	(6)	With No Offset	(8)
\$1,500	7.2%	\$1,789	\$34.40	\$26.40	\$75.10	\$185.00	\$147.45
3,200	5.8%	3,816	73.39	56.32	80.95	185.00	144.53
5,200	5.1%	6,201	119.25	91.52	87.83	185.00	141.09
7,200	4.7%	8,586	165.12	126.72	94.71	185.00	137.65
9,200	4.0%	10,971	210.98	161.93	101.59	185.00	134.21
11,200	3.9%	13,356	256.85	197.13	108.47	185.00	130.77
14,000	6.1%	16,695	321.06	246.41	118.10	221.77	162.72
18,000	9.7%	21,465	412.79	316.81	131.86	285.13	219.20
23,000	11.3%	27,428	527.46	405.38	149.06	364.84	290.31
28,000	9.3%	33,391	642.13	495.95	157.70	446.36	367.50
36,000	14.9%	42,931	825.59	640.06	157.70	576.06	497.20
47,458	5.2%	56,595	1,088.37	827.27	157.70	744.55	665.69
53,850	3.9%	64,217	1,234.93	931.70	157.70	838.53	759.67
60,185	2.7%	71,771	1,380.22	1,035.20	157.70	931.68	852.83
66,127	2.1%	78,858	1,516.50	1,132.30	157.70	1,000.00	930.68
73,864	2.0%	88,084	1,693.93	1,254.04	157.70	1,000.00	985.47
85,357	0.8%	101,790	1,957.50	1,432.26	157.70	1,000.00	1,000.00
98,980	0.4%	118,036	2,269.92	1,641.70	157.70	1,000.00	1,000.00
115,743	0.2%	138,026	2,654.35	1,896.35	157.70	1,000.00	1,000.00
126,956	0.1%	151,397	2,911.49	2,066.68	157.70	1,000.00	1,000.00
157,174	0.2%	187,433	3,604.48	2,525.73	157.70	1,000.00	1,000.00
202,361	0.1%	241,319	4,640.75	3,212.16	157.70	1,000.00	1,000.00
244,240	0.1%	291,261	5,601.17	3,848.35	157.70	1,000.00	1,000.00
319,757	0.0%	381,316	7,333.00	4,995.54	157.70	1,000.00	1,000.00
515,529	0.1%	614,778	11,822.66	7,969.54	157.70	1,000.00	1,000.00
\$26,776		\$31,931	\$614.06	\$465.33	\$130.72	\$425.11	\$362.89

Estimated Weekly Average Part Time Income Benefits	\$185.00	\$144.72
Estimated Weekly Average Full Time Income Benefits	\$478.17	\$411.11

Notes by Column:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with four years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) From Column (20), Page 2 of this exhibit.
- (6) Calculated as 75% of the CPP retirement pension plus \$69.94.
- (7) 90% of Column (20), Page 2 of this exhibit, subject to a minimum of \$185 and a maximum of \$1,000.
- (8) Column (7) reduced for benefits payable under CPP disability plans.

Technical Appendix
Calculation of TRA Weekly
Income Replacement Benefits
TRA Primary

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Gross Weekly Income	Taxable Weekly Income	Basic Federal Tax	Prov. Tax	Prov. Surtax	Fed Surtax	UI Premium	CPP Contribution	Total Deductions	Net Weekly Income
(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)
\$34.40	\$24.08	\$4.09	\$2.17	\$0.00	\$0.20	\$0.77	\$0.76	\$8.00	\$26.40
73.39	51.37	8.73	4.63	0.00	0.44	1.65	1.61	17.06	56.32
119.25	83.48	14.19	7.52	0.00	0.71	2.68	2.62	27.73	91.52
165.12	115.58	19.65	10.41	0.00	0.98	3.72	3.63	38.39	126.72
210.98	147.69	25.11	13.31	0.00	1.26	4.75	4.64	49.06	161.93
256.85	179.80	30.57	16.20	0.00	1.53	5.78	5.65	59.72	197.13
321.06	224.74	38.21	20.25	0.00	1.91	7.22	7.06	74.65	246.41
412.79	288.96	49.12	26.03	0.00	2.46	9.29	9.08	95.98	316.81
527.46	369.22	62.77	33.27	0.00	3.14	11.87	11.04	122.08	405.38
642.13	449.49	76.41	40.50	0.00	3.82	14.40	11.04	146.17	495.95
825.59	577.91	101.32	53.70	0.00	5.07	14.40	11.04	185.53	640.06
1,088.37	761.86	149.14	79.05	0.00	7.46	14.40	11.04	261.09	827.27
1,234.93	864.45	175.82	93.18	0.00	8.79	14.40	11.04	303.24	931.70
1,380.22	966.15	202.26	107.20	0.00	10.11	14.40	11.04	345.02	1,035.20
1,516.50	1,061.55	227.07	120.34	0.00	11.35	14.40	11.04	384.21	1,132.30
1,693.93	1,185.75	262.31	139.02	0.00	13.12	14.40	11.04	439.88	1,254.04
1,957.50	1,370.25	315.81	167.38	0.00	16.61	14.40	11.04	525.24	1,432.26
2,269.92	1,588.95	379.23	200.99	0.87	21.68	14.40	11.04	628.22	1,641.70
2,654.35	1,858.04	457.27	242.35	5.00	27.93	14.40	11.04	758.00	1,896.35
2,911.49	2,038.04	509.47	270.02	7.77	32.10	14.40	11.04	844.80	2,066.68
3,604.48	2,523.13	650.15	344.58	15.23	43.36	14.40	11.04	1,078.75	2,525.73
4,640.75	3,248.52	860.51	456.07	26.38	60.19	14.40	11.04	1,428.59	3,212.16
5,601.17	3,920.82	1,055.47	559.40	36.71	75.78	14.40	11.04	1,752.81	3,848.35
7,333.00	5,133.10	1,407.04	745.73	55.34	103.91	14.40	11.04	2,337.46	4,995.54
11,822.66	8,275.86	2,318.44	1,228.77	103.65	176.82	14.40	11.04	3,853.12	7,969.54
\$614.06									\$465.33

Notes by Column:

- (11) From Column (4) page 1 of this exhibit.
- (12) Column (9) times 70%.
- (13) 17% of the first \$543.75 of Column (12) plus 26% of taxable income between \$543.75 and \$1,087.50, plus 29% of taxable income above \$1,087.50.
- (14) 53% of Column (13).
- (15) 10% of the portion of Column (14) in excess of \$192.31.
- (16) 5% of Column (13), plus 3% of the portion of Column (13) in excess of \$288.46.
- (17) 2.25% of the first \$640 of Column (11).
- (18) 2.2% of the first \$501.92 of Column (11).
- (19) Sum of Columns (13) through (18).
- (20) Column (11) minus Column (19).

Technical Appendix
Total Income Benefits Constr - The Road Ahead
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Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590	1.00000			
	2	0.005	1,182,720	1.00000			
	3	0.008	1,135,411	1.00000			
	4	0.011	1,095,672	1.00000			
	5	0.014	1,062,802	1.00000			
	6	0.016	1,036,231	1.00000			
	7	0.019	1,015,507	1.00000			
	8	0.022	1,000,000	1.00000	\$26.43	\$68.31	\$60.73
	9	0.025	988,169	0.99978	26.43	68.31	60.73
	10	0.027	975,780	0.99955	26.43	68.31	60.73
	11	0.030	962,743	0.99933	26.43	68.31	60.73
	12	0.033	948,956	0.99910	26.43	68.31	60.73
	13	0.036	934,311	0.99888	26.43	68.31	60.73
	14	0.038	918,747	0.99866	26.43	68.31	60.73
	15	0.041	902,351	0.99844	26.43	68.31	60.73
	16	0.044	885,441	0.99821	26.43	68.31	60.73
	17	0.047	868,503	0.99799	26.43	68.31	60.73
	18	0.049	852,015	0.99777	26.43	68.31	60.73
	19	0.052	836,290	0.99754	26.43	68.31	60.73
	20	0.055	821,406	0.99732	26.43	68.31	60.73
	21	0.058	807,271	0.99710	26.43	68.31	60.73
	22	0.060	793,766	0.99687	26.43	68.31	60.73
	23	0.063	780,876	0.99665	26.43	68.31	60.73
	24	0.066	768,734	0.99643	26.43	68.31	60.73
	25	0.068	757,600	0.99621	26.43	68.31	60.73
	26	0.071	747,797	0.99598	26.43	68.31	60.73
	27	0.074	739,664	0.99576	26.43	68.31	60.73
	28	0.077	738,105	0.99554	26.43	68.31	60.73
Weeks	4.5	0.086	734,041	0.99476	185.00	478.17	425.11
	5.5	0.105	687,923	0.99320	185.00	478.17	425.11
	6.5	0.125	598,120	0.99165	185.00	478.17	425.11
	7.5	0.144	542,608	0.99010	185.00	478.17	425.11
	8.5	0.163	498,142	0.98855	185.00	478.17	425.11
	9.5	0.182	460,058	0.98701	185.00	478.17	425.11
	10.5	0.201	427,115	0.98547	185.00	478.17	425.11
	11.5	0.221	398,368	0.98392	185.00	478.17	425.11
	12.5	0.240	373,065	0.98239	185.00	478.17	425.11
	13.5	0.259	350,615	0.98085	185.00	478.17	425.11
	14.5	0.278	330,561	0.97932	185.00	478.17	425.11
	15.5	0.297	312,485	0.97779	185.00	478.17	425.11
	16.5	0.316	296,124	0.97626	185.00	478.17	425.11
	17.5	0.336	281,300	0.97473	144.72	411.11	362.89
	18.5	0.355	267,818	0.97321	144.72	411.11	362.89
	19.5	0.374	255,516	0.97169	144.72	411.11	362.89
	20.5	0.393	244,256	0.97017	144.72	411.11	362.89
	21.5	0.412	233,910	0.96865	144.72	411.11	362.89
	22.5	0.432	224,355	0.96714	144.72	411.11	362.89
	23.5	0.451	215,475	0.96562	144.72	411.11	362.89
	24.5	0.470	207,168	0.96411	144.72	411.11	362.89
	25.5	0.489	199,352	0.96261	144.72	411.11	362.89
	26.5	0.508	191,273	0.96110	411.11	411.11	411.11

Technical Appendix
Total Income Benefits Costs - The Road Ahead
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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	27.5	0.527	183,135	0.95960	411.11	411.11	411.11	72,246,990
	28.5	0.547	175,448	0.95810	411.11	411.11	411.11	69,106,254
	29.5	0.566	168,188	0.95660	411.11	411.11	411.11	66,143,087
	30.5	0.585	161,327	0.95511	411.11	411.11	411.11	63,345,685
	31.5	0.604	154,843	0.95361	411.11	411.11	411.11	60,704,667
	32.5	0.623	152,476	0.95212	411.11	411.11	411.11	59,683,258
	33.5	0.642	149,304	0.95063	411.11	411.11	411.11	58,350,288
	34.5	0.662	145,362	0.94915	411.11	411.11	411.11	56,720,882
	35.5	0.681	140,655	0.94766	411.11	411.11	411.11	54,798,388
	36.5	0.700	135,587	0.94618	411.11	411.11	411.11	52,741,343
	37.5	0.719	130,581	0.94470	411.11	411.11	411.11	50,714,676
	38.5	0.738	126,032	0.94323	411.11	411.11	411.11	48,871,426
	39.5	0.758	121,873	0.94175	411.11	411.11	411.11	47,184,810
	40.5	0.777	118,160	0.94028	411.11	411.11	411.11	45,675,753
	41.5	0.796	114,742	0.93881	411.11	411.11	411.11	44,285,156
	42.5	0.815	113,435	0.93734	411.11	411.11	411.11	43,712,270
	43.5	0.834	108,266	0.93588	411.11	411.11	411.11	41,655,169
	44.5	0.853	105,238	0.93441	411.11	411.11	411.11	40,426,852
	45.5	0.873	102,345	0.93295	411.11	411.11	411.11	39,254,052
	46.5	0.892	99,577	0.93149	411.11	411.11	411.11	38,132,689
	47.5	0.911	96,928	0.93004	411.11	411.11	411.11	37,060,235
	48.5	0.930	94,391	0.92858	411.11	411.11	411.11	36,033,797
	49.5	0.949	91,958	0.92713	411.11	411.11	411.11	35,050,118
	50.5	0.968	89,626	0.92568	411.11	411.11	411.11	34,107,863
	51.5	0.988	87,387	0.92424	411.11	411.11	411.11	33,203,805
Months	12.5	1.042	82,662	0.96158	1,780	1,780	1,780	141,494,015
	13.5	1.125	76,527	0.95507	1,780	1,780	1,780	130,105,115
	14.5	1.208	72,286	0.94860	1,780	1,780	1,780	122,062,258
	15.5	1.292	66,747	0.94217	1,780	1,780	1,780	111,945,458
	16.5	1.375	62,806	0.93579	1,780	1,780	1,780	104,622,088
	17.5	1.458	59,346	0.92945	1,780	1,780	1,780	98,188,635
	18.5	1.542	56,888	0.92315	1,780	1,780	1,780	93,484,145
	19.5	1.625	54,715	0.91689	1,780	1,780	1,780	89,304,063
	20.5	1.708	52,776	0.91068	1,780	1,780	1,780	85,555,672
	21.5	1.792	51,051	0.90451	1,780	1,780	1,780	82,198,541
	22.5	1.875	49,503	0.89838	1,780	1,780	1,780	79,166,036
	23.5	1.958	48,125	0.89230	1,780	1,780	1,780	76,440,874
	24.5	2.042	31,830	0.92613	1,780	1,780	1,780	52,475,351
	25.5	2.125	31,049	0.91986	1,780	1,780	1,780	50,840,973
	26.5	2.208	30,346	0.91362	1,780	1,780	1,780	49,353,188
	27.5	2.292	29,711	0.90743	1,780	1,780	1,780	47,993,072
	28.5	2.375	29,143	0.90129	1,780	1,780	1,780	46,756,614
	29.5	2.458	28,632	0.89518	1,780	1,780	1,780	45,625,539
	30.5	2.542	28,180	0.88911	1,780	1,780	1,780	44,601,024
	31.5	2.625	27,800	0.88309	1,780	1,780	1,780	43,701,482
	32.5	2.708	27,467	0.87711	1,780	1,780	1,780	42,885,464
	33.5	2.792	27,179	0.87117	1,780	1,780	1,780	42,148,283
	34.5	2.875	26,931	0.86526	1,780	1,780	1,780	41,480,732
	35.5	2.958	26,686	0.85940	1,780	1,780	1,780	40,824,882
	36.5	3.042	26,442	0.85399	1,780	1,780	1,780	41,985,523
	37.5	3.125	26,147	0.84895	1,780	1,780	1,780	41,235,822

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Months	38.5	3.208	25,886	0.87994	1,780	1,780	1,780	40,547,610
	39.5	3.292	25,659	0.87398	1,780	1,780	1,780	39,919,727
	40.5	3.375	25,465	0.86806	1,780	1,780	1,780	39,349,483
	41.5	3.458	25,295	0.86218	1,780	1,780	1,780	38,821,969
	42.5	3.542	25,103	0.85634	1,780	1,780	1,780	38,266,260
	43.5	3.625	24,937	0.85053	1,780	1,780	1,780	37,755,665
	44.5	3.708	24,797	0.84477	1,780	1,780	1,780	37,289,330
	45.5	3.792	24,654	0.83905	1,780	1,780	1,780	36,823,101
	46.5	3.875	24,522	0.83336	1,780	1,780	1,780	36,377,795
	47.5	3.958	24,404	0.82772	1,780	1,780	1,780	35,957,461
	48.5	4.042	24,245	0.82210	1,780	1,780	1,780	35,557,804
	49.5	4.125	24,102	0.81652	1,780	1,780	1,780	35,178,404
	50.5	4.208	23,968	0.81100	1,780	1,780	1,780	34,818,787
	51.5	4.292	23,843	0.80553	1,780	1,780	1,780	34,478,996
	52.5	4.375	23,726	0.80012	1,780	1,780	1,780	34,158,709
	53.5	4.458	23,619	0.79477	1,780	1,780	1,780	33,857,665
	54.5	4.542	23,537	0.78947	1,780	1,780	1,780	33,575,365
	55.5	4.625	23,461	0.78422	1,780	1,780	1,780	33,311,411
	56.5	4.708	23,391	0.77902	1,780	1,780	1,780	33,066,535
	57.5	4.792	23,321	0.77387	1,780	1,780	1,780	32,840,304
	58.5	4.875	23,263	0.76877	1,780	1,780	1,780	32,632,337
	59.5	4.958	23,206	0.76372	1,780	1,780	1,780	32,442,253
Years	5.5	5.500	23,149	0.75872	21,378	21,378	21,378	394,445,879
	6.5	6.500	22,543	0.76768	21,378	21,378	21,378	369,958,876
	7.5	7.500	22,053	0.77398	21,378	21,378	21,378	348,574,786
	8.5	8.500	21,570	0.77812	21,378	21,378	21,378	328,371,147
	9.5	9.500	21,119	0.78157	21,378	21,378	21,378	309,652,612
	10.5	10.500	20,668	0.78438	21,378	21,378	21,378	291,867,946
	11.5	11.500	20,240	0.78662	21,378	21,378	21,378	275,286,561
	12.5	12.500	19,825	0.78837	21,378	21,378	21,378	259,701,375
	13.5	13.500	19,420	0.78972	21,378	21,378	21,378	245,017,346
	14.5	14.500	19,022	0.79077	21,378	21,378	21,378	231,148,104
	15.5	15.500	18,629	0.79162	21,378	21,378	21,378	218,026,987
	16.5	16.500	18,240	0.79227	21,378	21,378	21,378	205,604,254
	17.5	17.500	17,854	0.79272	21,378	21,378	21,378	193,833,727
	18.5	18.500	17,470	0.79307	21,378	21,378	21,378	182,672,542
	19.5	19.500	17,085	0.79332	21,378	21,378	21,378	172,060,786
	20.5	20.500	16,699	0.79347	21,378	21,378	21,378	161,973,489
	21.5	21.500	16,313	0.79352	21,378	21,378	21,378	152,396,103
	22.5	22.500	15,925	0.79347	21,378	21,378	21,378	143,286,745
	23.5	23.500	15,536	0.79332	21,378	21,378	21,378	134,633,254
	24.5	24.500	15,143	0.79307	21,378	21,378	21,378	126,389,677
	25.5	25.500	14,748	0.79272	21,378	21,378	21,378	118,554,860
	26.5	26.500	14,350	0.79227	21,378	21,378	21,378	111,102,719
	27.5	27.500	13,952	0.79172	21,378	21,378	21,378	104,038,913
	28.5	28.500	13,550	0.79107	11,330	11,330	11,330	49,356,547
	29.5	29.500	13,147	0.79032	11,330	11,330	11,330	46,123,121
	30.5	30.500	12,742	0.78947	11,330	11,330	11,330	43,054,264
	31.5	31.500	12,335	0.78852	11,330	11,330	11,330	40,142,487
	32.5	32.500	11,927	0.78747	11,330	11,330	11,330	37,383,753
	33.5	33.500	11,518	0.78632	11,330	11,330	11,330	34,770,850

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full-Time Benefits	Present Value Of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	34.5	34.500	11,108	0.25662	11,330	11,330	11,330	32,296,886
	35.5	35.500	10,696	0.24716	11,330	11,330	11,330	29,952,476
	36.5	36.500	10,284	0.23805	11,330	11,330	11,330	27,737,030
	37.5	37.500	9,873	0.22927	11,330	11,330	11,330	25,646,823
	38.5	38.500	9,463	0.22082	11,330	11,330	11,330	23,675,537
	39.5	39.500	9,053	0.21268	11,330	11,330	11,330	21,814,741
	40.5	40.500	8,654	0.20484	11,330	11,330	11,330	20,084,498
	41.5	41.500	8,054	0.19728	11,330	11,330	11,330	18,002,892
	42.5	42.500	7,835	0.19001	11,330	11,330	11,330	16,867,713
	43.5	43.500	7,435	0.18301	11,330	11,330	11,330	15,416,462
	44.5	44.500	7,038	0.17626	11,330	11,330	11,330	14,055,282
	45.5	45.500	6,645	0.16976	11,330	11,330	11,330	12,781,206
	46.5	46.500	6,257	0.16350	11,330	11,330	11,330	11,591,231
	47.5	47.500	5,876	0.15748	11,330	11,330	11,330	10,484,114
	48.5	48.500	5,502	0.15167	11,330	11,330	11,330	9,454,903
	49.5	49.500	5,134	0.14608	11,330	11,330	11,330	8,497,260
	50.5	50.500	4,775	0.14069	11,330	11,330	11,330	7,611,723
	51.5	51.500	4,425	0.13551	11,330	11,330	11,330	6,793,748
	52.5	52.500	4,085	0.13051	11,330	11,330	11,330	6,040,526
	53.5	53.500	3,759	0.12570	11,330	11,330	11,330	5,353,547
	54.5	54.500	3,442	0.12106	11,330	11,330	11,330	4,721,355
	55.5	55.500	3,138	0.11660	11,330	11,330	11,330	4,145,676
	56.5	56.500	2,848	0.11230	11,330	11,330	11,330	3,623,839
	57.5	57.500	2,572	0.10816	11,330	11,330	11,330	3,152,002
	58.5	58.500	2,310	0.10418	11,330	11,330	11,330	2,726,553
	59.5	59.500	2,063	0.10033	11,330	11,330	11,330	2,345,243
	60.5	60.500	1,832	0.09664	11,330	11,330	11,330	2,005,860
	61.5	61.500	1,615	0.09307	11,330	11,330	11,330	1,703,077
	62.5	62.500	1,415	0.08964	11,330	11,330	11,330	1,437,159

(9) Present value of all benefits paid from time 1 week to 62.5 years \$13,993,029,186

(10) Number disabled at 1 week 1,000,000

(11) Present Value of average total income benefits (TRA Primary)	\$13,993
---	----------

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5% and indexing annually at 4.5% per year.
- (5) Benefits amount for part-time workers.
- (6) Benefits amount for full-time workers.
- (7) Weighted average benefits for full- and part-time workers [Column (5) times 0.181 + Column (6) times 0.819].
- (8) Present value of payments for disabled wage earners during specified time period [Column (3) times Column (4) times Column (7)].
- (9) Sum of Column (8).
- (10) Column (3) at 1 week.
- (11) Line (9) divided by Line (10).

APPENDIX 7

Losses Medical Benefits by Size

Note: The following exhibits are excerpts from a series of exhibits prepared by IBC for the OIC, that display losses by size for the medical benefits coverage. Due to severe time constraints IBC was not able to conduct a detailed quality review of the exhibits.

Technical Appendix

DISTRIBUTION OF CLAIMS BY AMOUNT AND COVERAGE USING GENERATED CLAIM COUNTS PRIVATE PASSENGER AUTOMOBILE - EXCLUDING FARMERS PROVINCE OF ONTARIO ACCIDENT BENEFITS MEDICAL PAYMENTS - KOL 31 & 41

Appendix 7
Exhibit 1
Page 2 of 5

AMOUNT OF CLAIMS	1986				1987				1988			
	NUMBER		AMOUNT		NUMBER		AMOUNT		NUMBER		AMOUNT	
	\$	% CLM	\$	% CLM	\$	% CLM	\$	% CLM	\$	% CLM	\$	% CLM
- \$2,000	90.4	90.4	29.8	29.8	88.0	88.0	27.0	27.0	88.1	88.1	28.5	28.5
\$2,001 - \$5,000	6.1	98.5	20.9	50.5	7.7	95.7	22.7	49.7	8.9	95.0	24.1	50.6
\$5,001 - \$7,500	1.3	97.8	8.6	59.1	1.8	97.5	10.5	60.2	2.1	97.1	11.0	51.6
\$7,501 - \$10,000	.7	98.5	6.8	65.7	.8	98.3	6.0	66.2	.9	98.0	5.8	58.4
\$10,001 - \$15,000	.7	99.2	8.8	74.5	.8	99.1	9.7	75.9	.9	98.9	3.2	77.8
\$15,001 - \$20,000	.3	99.5	5.3	79.8	.4	99.5	6.3	82.2	.4	99.3	5.6	83.2
\$20,001 - \$25,000	.3	99.8	6.8	88.4	.3	99.8	6.5	88.7	.4	99.7	7.7	90.9
\$25,001 - \$37,500	.2	100.0	5.2	91.6	.2	100.0	5.2	93.9	.3	100.0	6.1	97.0
\$37,501 - \$50,000			1.8	93.2			1.8	95.5			1.0	98.0
\$50,001 - \$100,000			3.7	98.9			2.0	97.5			2.0	100.0
\$100,001 - \$150,000			.9	97.8			1.2	98.7				
\$150,001 - \$200,000							.5	99.2				
\$200,001 - \$250,000			.7	98.5								
\$250,001 - \$300,000												
\$300,001 - \$350,000							.8	100.0				
\$350,001 - \$400,000												
\$400,001 - \$450,000			1.5	100.0								
\$450,001 - \$500,000												
\$500,001 - \$550,000												
\$550,001 - \$600,000												
\$600,001 - \$650,000												
\$650,001 - \$700,000												
\$700,001 - \$750,000												
\$750,001 - \$800,000												
\$800,001 - \$850,000												
\$850,001 - \$900,000												
\$900,001 - \$950,000												
\$950,001 - \$1,000,000												
MORE THAN \$1,000,000												
EXPENSE AMOUNTS	2,844,631				3,436,333				4,042,653			
NUMBER OF CLAIMS	30,398				35,100				38,684			
TOTAL CLAIMS AMOUNT	27,752,870				38,798,624				44,982,430			

VOLUNTARY BUSINESS

A1X33035-01

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AS OF DECEMBER 1990 CLOSE-OFF

William M. Mercer Limited

Technical Appendix

Appendix 7
Exhibit 1
Page 3 of 5

DISTRIBUTION OF CLAIMS BY AMOUNT AND COVERAGE
USING GENERATED CLAIM COUNTS
PRIVATE PASSENGER AUTOMOBILE - EXCLUDING FARMERS
PROVINCE OF ONTARIO
ACCIDENT BENEFITS
MEDICAL PAYMENTS - AOL 31 & 41

AMOUNT OF CLAIMS	1989				1990			
	NUMBER		AMOUNT		NUMBER		AMOUNT	
	%	% CLM	%	% CLM	%	% CLM	%	% CLM
- \$2,000	95.5	95.5	29.9	29.9	84.9	84.9	33.5	33.5
\$2,001 - \$5,000	10.2	95.7	28.5	58.4	10.4	95.3	25.4	58.9
\$5,001 - \$7,500	2.0	97.7	10.8	89.2	2.8	98.1	12.5	71.4
\$7,501 - \$10,000	.8	98.5	5.5	75.7	.7	98.8	4.9	78.3
\$10,001 - \$15,000	.7	99.2	7.3	83.0	.5	99.4	5.6	81.9
\$15,001 - \$20,000	.3	99.5	4.0	87.0	.2	99.6	2.4	84.3
\$20,001 - \$25,000	.3	99.8	5.3	92.3	.2	99.8	3.0	87.3
\$25,001 - \$27,500	2	100.0	4.5	96.8	.1	99.9	2.9	90.2
\$27,501 - \$50,000			1.5	98.3			1.0	91.2
\$50,001 - \$100,000			.3	99.2	1	100.0	2.8	94.0
\$100,001 - \$150,000			.2	99.4			1.8	95.8
\$150,001 - \$200,000							.4	96.2
\$200,001 - \$250,000							2.0	98.2
\$250,001 - \$300,000							.5	98.7
\$300,001 - \$350,000			.5	100.0			.5	99.3
\$350,001 - \$400,000							.7	100.0
\$400,001 - \$450,000								
\$450,001 - \$500,000								
\$500,001 - \$550,000								
\$550,001 - \$600,000								
\$600,001 - \$650,000								
\$650,001 - \$700,000								
\$700,001 - \$750,000								
\$750,001 - \$800,000								
\$800,001 - \$850,000								
\$850,001 - \$900,000								
\$900,001 - \$950,000								
\$950,001 - \$1,000,000								
MORE THAN \$1,000,000								
EXPENSE AMOUNTS	3,138,591				1,571,439			
NUMBER OF CLAIMS	43,279				42,332			
TOTAL CLAIMS AMOUNT	48,282,966				54,244,017			

VOLUNTARY BUSINESS

41X33035-01

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AS OF DECEMBER 1990 CLOSE-OFF

William M. Mercer Limited

Technical Appendix

DISTRIBUTION OF CLAIMS BY AMOUNT AND COVERAGE —SING GENERATED CLAIM COUNTS PRIVATE PASSENGER AUTOMOBILE - EXCLUDING FARMERS PROVINCE OF ONTARIO ACCIDENT BENEFITS MEDICAL PAYMENTS - COL 31 & 41

Appendix 7
Exhibit 1
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AMOUNT OF CLAIMS	1986				1987				1988			
	NUMBER		AMOUNT		NUMBER		AMOUNT		NUMBER		AMOUNT	
	%	% CLM	%	% CLM	%	% CLM	%	% CLM	%	% CLM	%	% CLM
- \$2,000	99.3	99.3	24.8	24.8	98.2	98.2	27.1	27.1	96.5	96.5	27.0	27.0
\$2,001 - \$5,000	5.4	95.7	19.1	43.9	7.5	95.7	20.7	47.8	8.9	95.4	24.2	51.2
\$5,001 - \$7,500	1.4	97.1	8.2	52.1	1.4	97.1	8.4	56.2	1.4	96.8	7.6	58.8
\$7,501 - \$10,000	2	97.3	1.4	53.5	.5	97.6	1.1	60.3	1.1	97.9	8.7	67.5
\$10,001 - \$15,000	8	98.1	9.5	63.0	1.0	98.6	11.8	72.1	3	98.8	9.6	77.1
\$15,001 - \$20,000	7	98.8	10.6	73.6	.4	99.0	5.2	78.3	.5	99.3	7.3	84.4
\$20,001 - \$25,000	3	99.6	16.8	90.4	.7	99.7	14.9	93.2	.4	99.7	7.5	91.9
\$25,001 - \$37,500	.4	100.0	9.6	100.0	.3	100.0	6.8	100.0	2	99.9	5.7	97.6
\$37,501 - \$50,000									.1	100.0	2.4	100.0
\$50,001 - \$100,000												
\$100,001 - \$150,000												
\$150,001 - \$200,000												
\$200,001 - \$250,000												
\$250,001 - \$300,000												
\$300,001 - \$350,000												
\$350,001 - \$400,000												
\$400,001 - \$450,000												
\$450,001 - \$500,000												
\$500,001 - \$550,000												
\$550,001 - \$600,000												
\$600,001 - \$650,000												
\$650,001 - \$700,000												
\$700,001 - \$750,000												
\$750,001 - \$800,000												
\$800,001 - \$850,000												
\$850,001 - \$900,000												
\$900,001 - \$950,000												
\$950,001 - \$1,000,000												
MORE THAN \$1,000,000												
EXPENSE AMOUNTS			95,403				174,577				192,409	
NUMBER OF CLAIMS			1,053				1,462				1,714	
TOTAL CLAIMS AMOUNT			1,140,037				1,622,268				1,899,097	

FACILITY ASSOCIATION

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AS OF DECEMBER 1990 CLOSE-OFF

A1113035-01

William M. Mercer Limited

Technical Appendix

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DISTRIBUTION OF CLAIMS BY AMOUNT AND COVERAGE USING GENERATED CLAIM COUNTS PRIVATE PASSENGER AUTOMOBILE - EXCLUDING FARMERS PROVINCE OF ONTARIO ACCIDENT BENEFITS MEDICAL PAYMENTS - KOL 31 & 41

AMOUNT OF CLAIMS	1989				1990			
	NUMBER		AMOUNT		NUMBER		AMOUNT	
	%	% CLM	%	% CLM	%	% CLM	%	% CLM
- \$2,000	26.8	26.8	16.0	16.0	85.4	85.4	15.4	35.4
\$2,001 - 15,000	3.7	26.5	27.2	53.2	10.1	95.5	23.2	58.6
15,001 - 57,500	1.5	28.0	3.2	11.4	2.0	97.5	8.7	57.3
57,501 - 110,000	5	98.6	4.7	76.1	1.0	98.5	6.1	73.4
110,001 - 115,000	5	99.2	5.9	83.0	.7	99.2	5.4	78.8
115,001 - 120,000	1	99.5	4.0	87.0	.2	99.4	2.7	81.5
120,001 - 125,000	2	99.7	4.3	91.3	.2	99.6	2.9	84.4
125,001 - 137,500	1	99.8	1.5	92.8	.2	99.8	4.3	88.7
137,501 - 150,000	1	99.9	1.0	95.8			1.2	89.9
150,001 - 1100,000	1	100.0	4.2	100.0	2	100.0	5.7	96.6
1100,001 - 1150,000								
1150,001 - 1200,000								
1200,001 - 1250,000							3.4	100.0
1250,001 - 1300,000								
1300,001 - 1350,000								
1350,001 - 1400,000								
1400,001 - 1450,000								
1450,001 - 1500,000								
1500,001 - 1550,000								
1550,001 - 1600,000								
1600,001 - 1650,000								
1650,001 - 1700,000								
1700,001 - 1750,000								
1750,001 - 1800,000								
1800,001 - 1850,000								
1850,001 - 1900,000								
1900,001 - 1950,000								
1950,001 - 11,000,000								
MORE THAN 11,000,000								
EXPENSE AMOUNTS	250,934				174,585			
NUMBER OF CLAIMS	1,570				5,078			
TOTAL CLAIMS AMOUNT	1,993,010				7,286,277			

FACILITY ASSOCIATION

A1233035-01

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AS OF DECEMBER 1990 CLOSE-OFF

William M. Mercer Limited

 Workers' Compensation Board Commission des accidents du travail	☐ Initial Assessment ☐ Reassessment	Activities of Daily Living Scale (ADLS)	
	Worker's Name: _____ Claim No.: _____ Assessor Date: _____		
Injury: _____		Pension Level: _____ %	Pension Date: _____ \$
Date of Birth: _____ ISU/Reg. Office: _____		Date Reported: _____ \$	Current Attendant's Allowance: _____ \$

INTRODUCTION:

The Board under Section 52(1)(c) of the Workers' Compensation Act, will accept entitlement for an attendant's allowance when a worker sustains a degree of helplessness due to permanent total disability.

Workers who are permanently totally disabled and awarded a 100% pension from the Board will be reviewed for entitlement to an attendant's allowance. The attendant's allowance which will vary depending on individual worker needs, provides funds for hiring attendants to supply in-home care and assistance.

ATTENDANT'S ALLOWANCE POLICY HIGHLIGHTS (EFFECTIVE JULY 1, 1989)

- Evaluating worker attendant needs shall be determined using an Activities of Daily Living Scale (ADLS) form 2976A.
- Attendant's allowance payments will be calculated based on hours of care required and the level(s) of care provided.
- Workers who employ attendants for 24 hours or more per week shall be required to register with the Board as an employer. Family members providing attendant care must also be covered where this time requirement is met. In many instances, a family member, usually the spouse, acts as the attendant.
- Attendants providing care for 24 hours or more per week are considered workers under the Ontario Workers' Compensation Act.
- Where an attendant's allowance is paid, entitlement and quality of care will be re-assessed annually, and confirmed, adjusted or discontinued as warranted.
- Attendant's allowance is usually paid to the worker unless there are factors which would cause payment to be made directly to the attendant or agency providing the service.

LEVELS OF ATTENDANT CARE:

- **Skilled Attendant Care (Part 1)**
Complex health care/hygiene functions which require trained/skilled personnel.
- **Personal Attendant Care (Part 2)**
Routine personal care which requires trained personnel.
- **Basic/Supervisory Attendant Care (Part 3)**
Basic supervisory functions which require responsible personnel.

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Part 1: SKILLED ATTENDANT CARE

Care Requirement	Activity	Frequency (X)	Minutes (a)	Total Minutes (Daily) (a)	Total Minutes (Wkly) (a)
Genito-Urinary Tracts	• performs catheterizations • positions, empties and cleans drainage systems • monitors residuals • cleanses worker and cleans equipment after procedure/incontinence • uses disposable adult briefs as required • attends to menstrual cycle needs as required				
	SUB TOTAL				
Bowel Care	• administers enemas or suppositories and performs stimulation or disimpaction • performs colostomy and/or ileostomy care • positions, empties and cleans drainage systems including leaconduts • uses disposable adult briefs as required • cleanses worker and cleans equipment after procedure/evacuation				
	SUB TOTAL				
Tracheostomy Care	• changes and cleans inner and outer cannulae as needed • changes tapes as required • performs suctioning as required • cleans & maintains suction equipment				
	SUB TOTAL				
Ventilator Care	• ensures that volume rate & pressure are maintained as prescribed • maintains humidification as specified • changes and cleans tubing and filters as required • cleans humidification system as required • adjusts settings according to worker needs, e.g. colds, congestion				
	SUB TOTAL				
Skin Care (outside of bathing)	• attends to skin care needs - wounds, sores, eruptions, e.g. amputees, severe burns, spinal cord injuries, etc. • applies medication and prescribed dressings • applies creams/lotions/pastes/ointments/powders as prescribed or required				
	SUB TOTAL				

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Part 1: SKILLED ATTENDANT CARE (cont'd.)

Care Requirement	Activity	Frequency (X)	Minutes (=)	Total Minutes (Daily) (*)	Total Minutes (Weekly)
Skin Care (cont'd.) (outside of bathing)	• checks body area(s) for evidence of pressure sores, skin breakdown/eruptions • changes worker's position in bed through lifting to prevent/minimize pressure sores, skin breakdown/shearing				
	SUB TOTAL				
Medication					
Oral	• administers prescribed medication(s) • monitors medication intake and effect • maintains and controls medication supply				
Injections	• administers prescribed medication(s) • monitors medication intake and effect • maintains and controls medication supply				
Inhalation/Oxygen Therapy	• administers prescribed dosage as required • maintains and controls inhalation supplies • cleans and maintains equipment				
		SUB TOTAL			
Bathing					
Bathtub/Shower	• transfers worker to and from bed/wheel-chair/Hoyer lift to bathtub/shower • bathes/showers and dries worker • applies creams/lotions/pastes/ointments/powders as prescribed or required				
Bed Bath	• prepares equipment • bathes and dries worker • applies creams/lotions/pastes/ointments/powders as prescribed or required • cleans and maintains bed bath equipment				
Oral Hygiene	• brush and floss • cleanses mouth as required • cleans dentures as required				
		SUB TOTAL			
Exercise	• assists worker with prescribed exercise/stretching program • assists worker with walking activities using crutches, canes, braces and/or walker				
		SUB TOTAL			

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Technical Appendix

Appendix 7

Exhibit 2

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PART 1: SKILLED ATTENDANT CARE (cont'd.)

Care Requirement	Activity	Frequency (X)	Minutes (=)	Total Minutes (Daily) (=)	Total Minutes (Weekly)
Other Therapy Transcutaneous Electric Nerve Stimulator (TENS) Dorsal Column Stimulator (DCS)	• prepares equipment • administers treatment as prescribed or required				
	• monitors skin • maintains equipment				
SUB TOTAL					
Maintenance of Supplies/Equipment	• monitors, orders and maintains required supplies and equipment • ensures that wheelchairs, prosthetic de- vices, Hoyer lifts, shower commodes and other specialized medical equip. and assistive devices are safe and secure				
SUB TOTAL					
PART 1 TOTAL					

For Complete Calculation Of Monthly Attendant's Allowance See Page 7

PART 2: PERSONAL ATTENDANT CARE

Dress (upper body)	• dresses worker - e.g., underwear, shirt/ blouse, sweater/cardigan, tie/scarf, jacket/windbreaker/coat, gloves and jewelry				
Dress (lower body)	• dresses worker - e.g., underwear, dispos- able adult briefs, skirt/pants, socks/panty hose/support hose, slippers and shoes				
SUB TOTAL					
Undress (upper body)	• undresses worker - e.g., gloves, jacket/ windbreaker/coat, sweater/cardigan, tie/ scarf, underwear				
Undress (lower body)	• undresses worker - e.g., slippers and shoes, skirt/pants, socks/pantyhose/sup- port hose, disposable adult briefs, under- wear				
SUB TOTAL					
Prosthetics	• applies upper/lower limb prostheses and stump sock(s) • exchanges terminal devices and adjusts prostheses as required • ensures that prosthesis is properly main- tained and in good working condition				
SUB TOTAL					

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PART 2: PERSONAL ATTENDANT CARE (cont'd.)

Care Requirement	Activity	Frequency (X)	Minutes (=)	Total Minutes (Daily) (=)	Total Minutes (Wkly)
Orthotics	• assists dressing worker using prescribed orthotics, e.g., burn garment(s), brace(s), supports, splints, elastic stockings				
SUB TOTAL ➡					
Grooming					
Face	• wash, rinse, dry - morning & evening				
Hands	• wash, rinse, dry - morning & evening, before and after meals, and following elimination				
Shaving	• shaves worker using an electric/safety razor				
Cosmetics	• applies make-up as desired/required				
Hair	• brushes/combs as required • shampoos, blow/towel dries • performs styling, set and comb-out				
Fingernails	• cleans and manicures as required				
Toenails	• cleans and trims as required				
SUB TOTAL ➡					
Feeding	• prepares worker for meals - includes transfer to appropriate location • provides assistance, either in whole or in part, in serving and feeding meals				
SUB TOTAL ➡					
Mobility					
Specifically applies to assisting worker in location change/transfer as part of daily routine, e.g., to and from bedroom for afternoon rests	• assists worker from a seating position, e.g., wheelchair, chair, sofa, couch • supervises/assists in walking • performs transfer needs as required, e.g., bed to wheelchair, wheelchair to bed				
SUB TOTAL ➡					
Extra Laundering	• launders worker's bedding and clothing as a result of incontinence/soilage • launders/cleans orthotic supplies which require special care				
SUB TOTAL ➡					
PART 2 TOTAL ➡					

For Complete Calculation Of Monthly Attendant's Allowance See Page 7

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PART 3: BASIC/SUPERVISORY ATTENDANT CARE (Examiner Note: Scores are entered as a guide in assessing TOTAL attendant care needs)

Care Requirement	Activity	Frequency (X)	Minutes (=)	Total Minutes (Daily) (=)	Total Minutes (Weekly)
Ventilator Dependent (high level quadriplegic or approx.)	• worker lacks the capacity to re-attach tubing if it becomes detached from the trachea and respiratory failure can be imminent • lacks the physical capacity to be self-sufficient in an emergency situation				
	SUB TOTAL				
Spinal Cord Injuries (paraplegic/quadruplegic)	• worker requires assistance to transfer from bed to wheelchair, also periodic or frequent turning, or genito-urinary care during the day/night • lacks the physical capacity to be self-sufficient in an emergency situation				
	SUB TOTAL				
Severe Head Injuries	• worker lacks the capacity to respond independently to an emergency or requires custodial care due to fluctuations in behaviour				
	SUB TOTAL				
Multiple Amputations (Upper bilateral, triple or quadruple amputee)	• worker lacks the ability to independently transfer to and from a wheelchair or to be self-sufficient in an emergency situation				
	SUB TOTAL				
SPECIAL NOTE: THE FOLLOWING ACTIVITIES ARE CONSIDERED PART OF BASIC/SUPERVISORY ATTENDANT CARE.					
Hygiene Bathroom	• performs tub/shower/sink/toilet cleaning after worker's usage to ensure a clean and safe environment				
	SUB TOTAL				
Bedroom	• changes worker's bedding, makes bed, cleans bedroom, including Hoyer lifts, overhead bars, bedside/serving tables • ensures comfort, safety and security in this environment				
	SUB TOTAL				
Clothing Care	• assists in preparing daily wearing apparel • hangs clothes and sorts clothing to be laundered/cleaned				
	SUB TOTAL				

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Technical Appendix

Appendix 7

Exhibit 2

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PART 3: BASIC/SUPERVISOR ATTENDANT CARE (cont'd.) (Examiner notes below are intended as a guide in assessing TOTAL ATTENDANT CARE needs.)

Care Requirement	Activity	Frequency (X)	Minutes (a)	Total Minutes (Daily) (a)	Total Minutes (Weekly)
Attendant Care on An Intermittent Basis 1. Where the worker lives alone or is left alone during the day, the case manager should determine the degree to which the worker may be dependent on others for activities of daily living. 2. Where the worker may be independent during the day once in a wheelchair or wearing a prosthesis, determine activities being performed by others, if any, on a daily basis.	Examples: • meals • laundry • housekeeping • correspondence (industrially blind) • meals • laundry				
SUB TOTAL					
PART 3 TOTAL					

CASE MANAGER: _____

DATE: _____

CALCULATION OF MONTHLY ATTENDANT'S ALLOWANCE TO BE COMPLETED BY DESIGNATED STAFF WITHIN SPECIALIZED VOCATIONAL REHABILITATION SERVICES (S.V.R.S.)

LEVEL OF CARE	TOTAL MINUTES WEEKLY	TOTAL HOURS WEEKLY	TOTAL HOURS MONTHLY	HOURLY RATE	TOTAL
SKILLED CARE PART 1	+ 60 =	X 4.2 WKS. =	X \$	= \$	
PERSONAL CARE PART 2	+ 60 =	X 4.2 WKS. =	X \$	= \$	
BASIC/ SUPERVISORY CARE PART 3	+ 60 =	X 4.2 WKS. =	X \$	= \$	
GRAND TOTAL					\$

CALCULATED BY: _____

DATE: _____

2798A(03/89)

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ADDITIONAL REPORTING REQUIREMENTS:

HEALTH CARE PROFESSIONALS (List external attendant care services being provided by health care personnel, e.g., Victorian Order of Nurses, etc.)		
MEDICATIONS (List prescribed medications identifying type, strength and frequency.)		
TYPE	DOSAGE	FREQUENCY
EQUIPMENT AND HOME/VEHICLE MODIFICATIONS (List specialized medical equipment, assistive devices, environmental controls and home/vehicle modifications.)		

2798A(03/88)

Technical Appendix

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LIFE TABLE 1995-1997 TABLE DE MORTALITE

CANADA

MALE / SEXE MASCULIN

AGE	L	D	P	Q	LL	T	E
0.....	100000	858	0.39142	0.00858	92253	7704280	73.04
1.....	99142	86	0.39933	0.00067	99105	7705027	72.67
2.....	99076	50	0.39950	0.00050	99048	7705922	71.72
3.....	99026	40	0.39959	0.00041	99008	7706674	70.78
4.....	98986	38	0.39964	0.00036	98968	7707866	69.79
5.....	98950	30	0.39970	0.00030	98935	7708898	68.81
6.....	98920	23	0.39978	0.00024	98909	7709863	67.83
7.....	98897	18	0.39982	0.00018	98889	7710855	66.85
8.....	98879	16	0.39984	0.00016	98871	7711857	65.88
9.....	98863	16	0.39984	0.00016	98855	7712896	64.87
10.....	98847	18	0.39982	0.00018	98838	7713441	63.88
11.....	98829	20	0.39978	0.00021	98819	7713902	62.89
12.....	98809	28	0.39972	0.00028	98795	7714783	61.91
13.....	98781	39	0.39961	0.00039	98762	7715899	60.92
14.....	98742	55	0.39944	0.00055	98715	7716227	59.95
15.....	98687	73	0.39925	0.00074	98651	7716912	58.98
16.....	98614	90	0.39909	0.00091	98569	7717661	58.02
17.....	98524	103	0.39885	0.00105	98473	7718291	57.08
18.....	98421	114	0.39865	0.00115	98364	7718819	56.13
19.....	98307	121	0.39876	0.00124	98248	7719295	55.20
20.....	98186	129	0.39870	0.00130	98122	7719709	54.27
21.....	98058	133	0.39865	0.00135	97991	7720067	53.34
22.....	97925	136	0.39862	0.00138	97857	7720295	52.41
23.....	97789	135	0.39861	0.00139	97722	7720423	51.48
24.....	97654	133	0.39864	0.00136	97587	7720517	50.55
25.....	97521	129	0.39868	0.00132	97457	7720572	49.62
26.....	97392	125	0.39871	0.00129	97330	7720598	48.68
27.....	97267	123	0.39873	0.00127	97206	7720603	47.75
28.....	97144	124	0.39873	0.00127	97082	7720637	46.81
29.....	97020	125	0.39872	0.00128	96958	7720696	45.87
30.....	96895	126	0.39870	0.00130	96832	7720788	44.92
31.....	96769	129	0.39867	0.00133	96706	7720866	43.98
32.....	96640	131	0.39864	0.00136	96575	7720931	43.04
33.....	96509	134	0.39861	0.00139	96442	7720978	42.10
34.....	96375	136	0.39859	0.00141	96307	7721044	41.16
35.....	96239	140	0.39855	0.00145	96169	7721099	40.21
36.....	96099	144	0.39850	0.00150	96027	7721166	39.27
37.....	95955	151	0.39842	0.00158	95879	7721241	38.33
38.....	95804	162	0.39831	0.00169	95723	7721362	37.39
39.....	95642	174	0.39816	0.00182	95565	7721528	36.45
40.....	95488	188	0.39803	0.00197	95374	7721664	35.52
41.....	95329	204	0.39785	0.00215	95177	7721777	34.59
42.....	95165	225	0.39764	0.00236	94962	7721834	33.66
43.....	94995	245	0.39741	0.00259	94727	7721911	32.74
44.....	94806	289	0.39716	0.00294	94470	7721944	31.82
45.....	94628	294	0.39688	0.00312	94169	7721974	30.91
46.....	94442	325	0.39655	0.00345	93860	7721985	30.01
47.....	94217	359	0.39616	0.00384	93538	7721996	29.11
48.....	93958	400	0.39571	0.00429	93165	7721967	28.22
49.....	93668	444	0.39522	0.00478	92736	7721910	27.34
50.....	93314	483	0.39468	0.00532	92267	7721874	26.47
51.....	92921	546	0.39406	0.00594	91768	7721827	25.61
52.....	92479	605	0.39338	0.00662	91172	7721769	24.75
53.....	91989	670	0.39262	0.00738	90534	7721697	23.92
54.....	91459	739	0.39181	0.00818	89823	7721613	23.08

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LIFE TABLE 1989-1997 TABLE DE MORTALITE

CANADA

MALE / SEXE MASCULIN

AGE	L	Q	P	Q	LL	T	E
55.....	89480	813	0.99092	0.00908	89094	1992924	22.28
56.....	88847	890	0.98999	0.01001	88202	1903870	21.46
57.....	87757	975	0.98889	0.01111	87269	1815664	20.69
58.....	86782	1062	0.98777	0.01223	86291	1728399	19.82
59.....	85720	1148	0.98680	0.01340	85148	1642149	19.16
60.....	84672	1242	0.98592	0.01468	83951	1557002	18.41
61.....	83330	1341	0.98491	0.01609	82660	1473051	17.69
62.....	81989	1451	0.98350	0.01770	81294	1390391	16.96
63.....	80538	1568	0.98183	0.01967	79754	1309127	16.25
64.....	78970	1689	0.97881	0.02119	78126	1229373	15.57
65.....	77281	1814	0.97553	0.02347	76374	1151247	14.90
66.....	75467	1942	0.97199	0.02574	74496	1074873	14.24
67.....	73525	2076	0.97176	0.02824	72487	1000377	13.61
68.....	71448	2209	0.96911	0.03089	70345	927690	12.99
69.....	69241	2339	0.96630	0.03370	68075	857948	12.38
70.....	66906	2467	0.96327	0.03673	65679	789471	11.80
71.....	64451	2592	0.95994	0.04006	63180	723791	11.23
72.....	61889	2708	0.95623	0.04377	60515	660632	10.68
73.....	59161	2828	0.95219	0.04781	57747	600117	10.14
74.....	56323	2956	0.94788	0.05212	54895	543370	9.63
75.....	53397	3093	0.94321	0.05679	51880	487905	9.13
76.....	50384	3119	0.93812	0.06188	48806	435825	8.68
77.....	47248	3187	0.93259	0.06741	45654	388819	8.19
78.....	44081	3236	0.92656	0.07344	42443	341185	7.74
79.....	40825	3258	0.92019	0.07981	39198	297722	7.32
80.....	37567	3255	0.91335	0.08665	35839	255524	6.91
81.....	34212	3229	0.90593	0.09407	32399	223587	6.52
82.....	31064	3177	0.89781	0.10219	29496	190689	6.14
83.....	27907	3099	0.88906	0.11094	26359	161394	5.79
84.....	24811	2983	0.87977	0.12023	23320	135039	5.44
85.....	21829	2841	0.86992	0.13019	20407	111715	5.12
86.....	18967	2676	0.85910	0.14090	17649	91308	4.81
87.....	16311	2487	0.84751	0.15249	15066	73699	4.52
88.....	13824	2279	0.83512	0.16488	12664	58881	4.24
89.....	11549	2065	0.82199	0.17801	10517	45907	3.98
90.....	9490	1822	0.80809	0.19197	8579	35389	3.73
91.....	7688	1586	0.79312	0.20688	6875	28811	3.50
92.....	6082	1358	0.77716	0.22284	5404	19936	3.28
93.....	4729	1091	0.75915	0.24085	4191	14532	3.07
94.....	3635	839	0.73916	0.26084	3216	10351	2.85
95.....	2798	691	0.71999	0.28331	2466	7139	2.55
96.....	2135	556	0.70223	0.29777	1857	4870	2.19
97.....	1579	502	0.68229	0.31774	1326	2913	1.79
98.....	1077	460	0.57249	0.42751	847	1488	1.38
99.....	617	359	0.41690	0.58110	437	838	1.04
100.....	258	193	0.25199	0.74802	182	201	0.78
101.....	65	59	0.10219	0.89781	36	39	0.60
102.....	7	7	0.00000	1.00000	3	3	0.90

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LIFE TABLE 1985-1987 TABLE DE MORTALITE

CANADA

FEMALE / SEXE FEMININ

AGE	L	D	P	Q	LL	T	E
0.....	100000	678	0.99322	0.00678	99415	7372923	75.73
1.....	99322	62	0.99938	0.00062	99286	7372508	75.27
2.....	99260	41	0.99959	0.00041	99235	7372222	75.32
3.....	99219	30	0.99970	0.00030	99204	7371987	75.35
4.....	99189	25	0.99974	0.00026	99175	7371783	75.38
5.....	99164	22	0.99978	0.00022	99153	7371608	75.40
6.....	99142	18	0.99982	0.00018	99133	7371455	75.41
7.....	99124	16	0.99984	0.00016	99118	7371323	75.43
8.....	99108	14	0.99986	0.00014	99101	7371207	75.44
9.....	99094	13	0.99988	0.00014	99087	7080106	71.45
10.....	99081	15	0.99986	0.00014	99073	6881018	70.48
11.....	99066	15	0.99985	0.00015	99058	6881845	69.47
12.....	99051	17	0.99982	0.00018	99043	6782888	68.48
13.....	99034	21	0.99979	0.00021	99023	6683844	67.49
14.....	99013	27	0.99973	0.00027	98999	6584820	66.50
15.....	98986	32	0.99968	0.00032	98970	6485821	65.52
16.....	98954	37	0.99962	0.00036	98935	6386861	64.54
17.....	98917	41	0.99959	0.00041	98897	6287915	63.57
18.....	98876	42	0.99958	0.00042	98855	6189019	62.59
19.....	98834	42	0.99958	0.00042	98813	6090164	61.62
20.....	98792	41	0.99959	0.00041	98772	5991390	60.65
21.....	98751	40	0.99959	0.00041	98731	5892579	59.67
22.....	98711	40	0.99959	0.00041	98691	5793848	58.70
23.....	98671	41	0.99959	0.00041	98650	5695157	57.72
24.....	98630	40	0.99959	0.00041	98610	5596507	56.74
25.....	98590	41	0.99959	0.00041	98569	5497887	55.77
26.....	98548	42	0.99958	0.00042	98528	5399329	54.79
27.....	98507	43	0.99956	0.00044	98486	5300800	53.81
28.....	98464	45	0.99954	0.00046	98442	5202314	52.83
29.....	98419	47	0.99952	0.00048	98395	5103872	51.86
30.....	98372	50	0.99949	0.00051	98347	5005477	50.88
31.....	98322	54	0.99946	0.00054	98295	4907130	49.91
32.....	98268	57	0.99942	0.00058	98240	4808835	48.94
33.....	98211	60	0.99938	0.00062	98181	4710596	47.96
34.....	98151	64	0.99935	0.00065	98119	4612414	46.99
35.....	98087	67	0.99931	0.00069	98053	4514295	46.02
36.....	98020	73	0.99926	0.00074	97983	4416242	45.05
37.....	97947	80	0.99919	0.00081	97907	4318259	44.08
38.....	97867	88	0.99910	0.00090	97823	4220352	43.12
39.....	97779	98	0.99900	0.00100	97730	4122528	42.16
40.....	97681	109	0.99888	0.00112	97625	4024788	41.20
41.....	97572	123	0.99875	0.00125	97510	3927172	40.25
42.....	97449	136	0.99860	0.00140	97381	3829681	39.30
43.....	97313	151	0.99845	0.00155	97238	3732280	38.35
44.....	97162	167	0.99829	0.00172	97079	3635042	37.41
45.....	96995	184	0.99810	0.00190	96903	3537963	36.48
46.....	96811	203	0.99790	0.00210	96710	3441060	35.54
47.....	96608	224	0.99769	0.00231	96498	3344350	34.62
48.....	96384	248	0.99743	0.00257	96260	3247854	33.70
49.....	96138	272	0.99717	0.00283	96000	3151594	32.78
50.....	95864	299	0.99688	0.00312	95715	3055884	31.87
51.....	95565	327	0.99657	0.00343	95401	2960890	30.97
52.....	95238	359	0.99624	0.00376	95028	2866479	30.08
53.....	94879	389	0.99589	0.00411	94604	2772920	29.19
54.....	94490	423	0.99553	0.00447	94275	2679735	28.31

Technical Appendix

Appendix 7
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LIFE TABLE 1985-1987 TABLE DE MORTALITE
CANADA
FEMALE / SEXE FEMININ

AGE	L	D	P	Q	LL	T	E
55.....	94087	458	0.38513	0.00487	93838	2580457	27.43
56.....	93809	486	0.38470	0.00530	93351	2488618	26.58
57.....	93113	535	0.38421	0.00579	92813	2393258	25.70
58.....	92574	586	0.38368	0.00632	92281	2300414	24.85
59.....	91888	634	0.38311	0.00689	91671	2206133	24.00
60.....	91354	686	0.38249	0.00751	91011	2116442	23.17
61.....	90668	744	0.38179	0.00821	90298	2025490	22.34
62.....	89924	809	0.38101	0.00889	89519	1935195	21.52
63.....	89115	877	0.38015	0.00955	88676	1845626	20.71
64.....	88238	950	0.38924	0.01078	87783	1758988	19.91
65.....	87288	1028	0.38824	0.01178	86775	1680199	19.12
66.....	86262	1111	0.38712	0.01288	85706	1602421	18.34
67.....	85151	1206	0.38583	0.01417	84548	1496714	17.58
68.....	83945	1306	0.38444	0.01556	83282	1412167	16.82
69.....	82629	1408	0.38297	0.01703	81925	1329875	16.00
70.....	81231	1516	0.38133	0.01867	80473	1248940	15.25
71.....	79715	1638	0.37945	0.02055	78936	1168467	14.53
72.....	78077	1777	0.37725	0.02275	77189	1087514	13.83
73.....	76300	1924	0.37478	0.02522	75330	1010583	13.14
74.....	74376	2074	0.37211	0.02789	73359	938945	12.57
75.....	72302	2232	0.36913	0.03087	71186	861705	11.92
76.....	70070	2398	0.36577	0.03423	68871	790513	11.28
77.....	67672	2576	0.36183	0.03807	66384	721649	10.65
78.....	65096	2751	0.35774	0.04229	63730	655285	10.07
79.....	62345	2916	0.35324	0.04686	60957	581545	9.48
80.....	59429	3074	0.34827	0.05173	57982	530655	8.93
81.....	56355	3232	0.34286	0.05725	54735	472766	8.38
82.....	53123	3388	0.33683	0.06377	51423	416027	7.87
83.....	49725	3526	0.32910	0.07090	47972	360588	7.37
84.....	46209	3633	0.32139	0.07861	44353	316627	6.90
85.....	42576	3707	0.31292	0.08708	40723	274234	6.44
86.....	38888	3750	0.30353	0.09647	36954	233512	6.01
87.....	35119	3756	0.29304	0.10689	33241	196516	5.60
88.....	31263	3715	0.28157	0.11843	29506	163277	5.21
89.....	27448	3615	0.26923	0.13077	25841	133771	4.84
90.....	24033	3484	0.25585	0.14415	22301	107930	4.48
91.....	20589	3285	0.24126	0.15874	18836	85830	4.15
92.....	17304	3023	0.22530	0.17470	15732	68884	3.85
93.....	14281	2807	0.21747	0.18253	12977	50961	3.58
94.....	11674	2126	0.21789	0.18211	10811	37324	3.25
95.....	9546	1792	0.21223	0.18771	9052	27313	2.88
96.....	7756	1657	0.20639	0.21361	7327	18881	2.41
97.....	6099	1672	0.27291	0.27409	5263	11734	1.92
98.....	4427	1730	0.40921	0.39078	3562	8471	1.46
99.....	2897	1495	0.44581	0.55418	1950	2508	1.00
100.....	1202	680	0.28817	0.73183	782	959	0.80
101.....	322	287	0.10475	0.89125	179	196	0.51
102.....	35	35	0.00000	1.00000	19	19	0.50

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LIFE TABLE 1985-1987 TABLE DE MORTALITE

ONTARIO

MALE / SEXE MASCULIN

AGE	L	D	P	Q	LL	T	E
0	100000	787	0.99233	0.00767	99326	7348788	73.48
1	99213	82	0.99917	0.00083	99139	7248460	73.05
2	99131	43	0.99958	0.00042	99149	7150261	72.10
3	99088	31	0.99969	0.00031	99113	7051111	71.13
4	99057	28	0.99972	0.00028	99083	6951898	70.15
5	99029	23	0.99978	0.00022	99057	6852915	69.17
6	99006	20	0.99980	0.00020	99036	6753898	68.18
7	98986	17	0.99983	0.00017	99017	6654822	67.20
8	98969	15	0.99985	0.00015	99002	6555805	66.21
9	98954	15	0.99985	0.00015	98987	6456803	65.22
10	98939	18	0.99983	0.00017	98971	6357817	64.23
11	98923	18	0.99981	0.00019	98953	6258846	63.24
12	98904	24	0.99976	0.00024	98932	6159892	62.26
13	98880	33	0.99967	0.00033	98904	6060960	61.27
14	98857	45	0.99954	0.00046	98865	5962056	60.28
15	98832	59	0.99940	0.00060	98813	5863192	59.32
16	98783	72	0.99927	0.00073	98747	5764379	58.35
17	98711	83	0.99916	0.00084	98670	5665632	57.40
18	98628	90	0.99906	0.00092	98583	5566862	56.44
19	98538	98	0.99901	0.00099	98489	5468379	55.50
20	98440	104	0.99895	0.00105	98388	5369981	54.58
21	98338	107	0.99891	0.00109	98283	5271502	53.61
22	98229	111	0.99888	0.00112	98174	5173220	52.68
23	98115	111	0.99887	0.00113	98063	5075048	51.72
24	98007	109	0.99888	0.00112	97952	4976983	50.78
25	97898	107	0.99891	0.00109	97844	4879031	49.84
26	97781	105	0.99893	0.00107	97738	4781187	48.89
27	97668	104	0.99893	0.00107	97634	4683448	47.94
28	97552	106	0.99892	0.00108	97529	4585814	46.99
29	97436	107	0.99890	0.00110	97423	4488285	46.04
30	97320	110	0.99887	0.00113	97314	4390863	45.10
31	97205	113	0.99884	0.00116	97203	4293548	44.15
32	97088	116	0.99880	0.00120	97088	4196346	43.20
33	96970	120	0.99877	0.00123	96970	4099258	42.25
34	96850	122	0.99874	0.00126	96849	4002288	41.30
35	96728	125	0.99871	0.00129	96728	3905439	40.35
36	96603	130	0.99865	0.00135	96608	3808713	39.40
37	96473	138	0.99857	0.00143	96484	3712115	38.45
38	96338	148	0.99846	0.00154	96321	3615580	37.51
39	96207	161	0.99833	0.00167	96187	3518329	36.57
40	96069	175	0.99818	0.00182	96058	3423163	35.63
41	95911	182	0.99800	0.00200	95915	3327164	34.68
42	95719	211	0.99790	0.00220	95613	3231348	33.73
43	95508	231	0.99798	0.00242	95393	3135736	32.80
44	95277	251	0.99798	0.00264	95161	3040343	31.81
45	95028	276	0.99711	0.00289	94888	2945192	30.89
46	94790	303	0.99680	0.00320	94659	2850304	29.96
47	94447	337	0.99642	0.00358	94278	2755705	29.16
48	94110	379	0.99598	0.00402	93920	2661427	28.28
49	93731	423	0.99546	0.00452	93520	2567506	27.38
50	93308	474	0.99492	0.00508	93071	2473985	26.51
51	92834	529	0.99430	0.00570	92570	2380918	25.65
52	92306	589	0.99362	0.00638	92011	2288346	24.79
53	91718	652	0.99289	0.00711	91390	2196335	23.95
54	91084	719	0.99211	0.00789	90708	2104945	23.12

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LIFE TABLE 1985-1987 TABLE DE MORTALITE
ONTARIO
MALE / SEXE MASCLIN

AGE	L	D	P	Q	LL	T	E
55.....	90345	790	0.89128	0.00874	89990	2014241	22.29
56.....	89555	867	0.99332	0.00968	89122	1914220	21.49
57.....	88668	932	0.98926	0.01074	88212	1825189	20.89
58.....	87738	1043	0.98811	0.01189	87214	1746957	19.91
59.....	86853	1137	0.98689	0.01311	86124	1689743	19.19
60.....	85996	1237	0.98595	0.01446	84937	1573619	18.29
61.....	84315	1343	0.98407	0.01593	83648	1488681	17.66
62.....	82978	1457	0.98243	0.01757	82248	1405033	16.93
63.....	81519	1578	0.98064	0.01938	80730	1322788	16.23
64.....	79941	1701	0.97873	0.02127	79080	1242058	15.54
65.....	78240	1827	0.97685	0.02325	77327	1182985	14.86
66.....	76413	1957	0.97438	0.02562	75435	1085638	14.21
67.....	74488	2093	0.97190	0.02810	73410	1010204	13.57
68.....	72383	2225	0.96924	0.03076	71250	938795	12.95
69.....	70138	2364	0.96644	0.03358	68961	869644	12.34
70.....	67784	2480	0.96341	0.03658	66544	798583	11.75
71.....	65304	2608	0.96007	0.03983	64000	730023	11.18
72.....	62856	2738	0.95633	0.04337	61327	666639	10.62
73.....	59958	2883	0.95224	0.04728	58528	604712	10.09
74.....	57025	2978	0.94785	0.05151	55608	546185	9.57
75.....	54117	3079	0.94210	0.05600	52577	490579	9.07
76.....	51038	3170	0.93790	0.06110	49483	438002	8.58
77.....	47988	3246	0.93218	0.06702	46245	388549	8.12
78.....	44822	3302	0.92601	0.07393	42971	342304	7.67
79.....	41320	3329	0.91942	0.08098	39686	299333	7.24
80.....	37981	3330	0.91234	0.08766	36326	258677	6.84
81.....	34661	3306	0.90487	0.09533	33009	222351	6.44
82.....	31358	3251	0.89631	0.10389	29731	190342	6.07
83.....	28105	3186	0.88734	0.11258	26522	160612	5.71
84.....	24939	3048	0.87780	0.12220	23415	134990	5.38
85.....	21891	2899	0.86761	0.13225	20442	110875	5.06
85+.....	18993	18993	0.00000	1.00000	90232	90232	4.75

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LIFE TABLE 1985-1987 TABLE DE MORTALITE

ONTARIO

FEMALE / SEXE FEMININ

AGE	L	D	P	Q	LL	T	E
0.....	100000	538	0.00052	0.00052	99447	7972583	79.73
1.....	99462	58	0.00058	0.00059	99391	7873135	79.24
2.....	99304	39	0.00039	0.00039	99281	7773809	78.28
3.....	99265	28	0.00028	0.00028	99251	7674524	77.31
4.....	99237	25	0.00025	0.00025	99219	7575272	76.34
5.....	99211	20	0.00020	0.00021	99201	7476053	75.35
6.....	99191	17	0.00017	0.00017	99183	7376852	74.37
7.....	99174	13	0.00013	0.00013	99168	7277689	73.38
8.....	99161	12	0.00012	0.00012	99155	7178501	72.39
9.....	99148	11	0.00011	0.00011	99144	7079348	71.40
10.....	99138	12	0.00012	0.00012	99132	6980202	70.41
11.....	99125	14	0.00014	0.00014	99119	6881071	69.42
12.....	99112	16	0.00016	0.00016	99104	6781952	68.43
13.....	99098	19	0.00019	0.00019	99088	6682848	67.44
14.....	99077	24	0.00024	0.00024	99065	6583761	66.45
15.....	99053	28	0.00028	0.00028	99033	6484695	65.47
16.....	99025	33	0.00033	0.00033	99009	6385667	64.48
17.....	98992	36	0.00036	0.00036	98974	6286649	63.49
18.....	98956	37	0.00037	0.00037	98938	6187674	62.50
19.....	98919	37	0.00037	0.00037	98901	6088738	61.51
20.....	98882	37	0.00037	0.00037	98864	5989835	60.52
21.....	98845	38	0.00038	0.00037	98827	5890972	59.53
22.....	98809	38	0.00038	0.00037	98791	5792144	58.54
23.....	98773	37	0.00037	0.00037	98754	5693354	57.55
24.....	98736	37	0.00037	0.00038	98717	5594599	56.56
25.....	98699	38	0.00038	0.00038	98680	5495882	55.57
26.....	98661	38	0.00038	0.00039	98642	5397202	54.58
27.....	98623	40	0.00040	0.00040	98603	5298560	53.59
28.....	98583	41	0.00041	0.00042	98562	5199957	52.60
29.....	98542	43	0.00043	0.00044	98520	5101395	51.61
30.....	98499	46	0.00046	0.00046	98478	5002875	50.62
31.....	98453	48	0.00048	0.00049	98429	4904298	49.63
32.....	98405	51	0.00049	0.00052	98380	4805869	48.64
33.....	98354	54	0.00054	0.00055	98327	4707589	47.65
34.....	98300	58	0.00058	0.00059	98271	4609262	46.66
35.....	98242	62	0.00062	0.00063	98211	4510991	45.67
36.....	98180	66	0.00066	0.00068	98146	4412791	44.68
37.....	98112	74	0.00074	0.00076	98075	4314634	43.69
38.....	98038	84	0.00084	0.00085	97996	4216595	42.70
39.....	97964	93	0.00093	0.00095	97908	4118663	41.71
40.....	97891	106	0.00099	0.00100	97808	4020866	40.72
41.....	97795	118	0.00106	0.00107	97698	3922848	39.73
42.....	97637	133	0.00113	0.00116	97570	3825152	38.74
43.....	97504	148	0.00124	0.00127	97430	3727562	37.75
44.....	97386	165	0.00131	0.00135	97273	3630152	36.76
45.....	97191	181	0.00133	0.00137	97101	3532879	35.77
46.....	97010	201	0.00137	0.00140	96909	3435778	34.78
47.....	96809	223	0.00140	0.00143	96697	3338888	33.79
48.....	96586	247	0.00146	0.00149	96463	3242172	32.80
49.....	96338	273	0.00151	0.00153	96203	3145709	31.81
50.....	96066	300	0.00157	0.00159	95916	3049507	30.82
51.....	95766	331	0.00165	0.00166	95601	2953591	29.83
52.....	95438	361	0.00171	0.00173	95255	2857990	28.84
53.....	95074	393	0.00178	0.00180	94878	2762735	27.85
54.....	94681	425	0.00185	0.00187	94480	2667858	26.86

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LIFE TABLE 1995-1997 TABLE DE MORTALITE
ONTARIO
FEMALE / SEXE FEMININ

AGE	L	D	P	Q	LL	T	E
55.....	94256	458	0.99513	0.00487	94027	2573389	27.30
56.....	93797	496	0.99471	0.00529	93549	2479362	26.43
57.....	93301	539	0.99422	0.00578	93031	2385813	25.57
58.....	92782	585	0.99369	0.00631	92489	2292782	24.72
59.....	92177	632	0.99313	0.00687	91960	2200313	23.87
60.....	91544	686	0.99251	0.00749	91201	2108453	23.03
61.....	90858	744	0.99181	0.00819	90489	2017252	22.20
62.....	90114	811	0.99100	0.00890	89706	1926786	21.38
63.....	89303	885	0.99009	0.00991	88860	1837098	20.57
64.....	88418	963	0.98911	0.01089	87936	1748198	19.77
65.....	87465	1047	0.98809	0.01197	86931	1660251	18.98
66.....	86406	1140	0.98692	0.01318	85838	1573330	18.21
67.....	85286	1240	0.98546	0.01455	84649	1487482	17.44
68.....	84029	1348	0.98369	0.01602	83365	1402944	16.69
69.....	82662	1463	0.98143	0.01757	81956	1319489	15.96
70.....	81229	1587	0.98071	0.01929	80445	1237634	15.24
71.....	79662	1693	0.97875	0.02125	78819	1157069	14.53
72.....	77988	1834	0.97647	0.02353	77062	1078273	13.83
73.....	76135	1995	0.97393	0.02607	75142	1001221	13.15
74.....	74190	2139	0.97116	0.02884	73080	926079	12.49
75.....	72011	2298	0.96810	0.03190	70862	852929	11.85
76.....	69713	2482	0.96468	0.03532	68482	782137	11.22
77.....	67251	2633	0.96084	0.03916	66036	713865	10.61
78.....	64618	2797	0.95671	0.04329	63219	647720	10.02
79.....	61821	2947	0.95233	0.04767	60347	584501	9.45
80.....	58874	3091	0.94781	0.05249	57329	524154	8.90
81.....	55783	3233	0.94204	0.05796	54167	466825	8.37
82.....	52590	3379	0.93675	0.06425	50862	412959	7.85
83.....	49174	3504	0.93075	0.07125	47422	361795	7.36
84.....	45670	3600	0.92417	0.07883	43670	314375	6.89
85.....	42070	3687	0.91793	0.08717	40236	270906	6.43
85+.....	38403	38403	0.90000	1.00000	230283	230283	6.00

Technical Appendix
Calculation of Medical Benefits Claim Frequency
For OMPP and TRA

Appendix 7
Exhibit 4
Page 1 of 1

<u>Accident Year</u> (1)	<u>Ultimate Frequency</u> (2)	<u>Weight</u> (3)
1989	0.69910	30%
1990	<u>0.71900</u>	<u>70%</u>

(4) Weighted Average Frequency 0.71303

<u>Product</u> (5)	<u>Adjusted Index</u> (6)	<u>Trended Ultimate Frequency</u> (7)
TRA	0.876	0.62455
OMPP	0.897	0.63924

Notes:

- (1) Accident year ended 6/30.
- (2) Accident year historical frequency.
- (3) Weighting used to reflect more recent experience.
- (4) Sum of Column (2) times Column (3).
- (6) Index from midpoint of experience period to midpoint of filing; from Appendix 3, Exhibits 5 and 6, Page 4.
- (7) Line (4) times Column (6).

Attendant Care

Assumptions

- "Long-term" care benefits will be provided at a claimant incidence rate of .5%
- 50% of those requiring "long-term" care will receive benefits equal to the maximum monthly benefit provided: \$3,000 a month under OMPP and \$3,000 indexed under TRA; subject to the \$500,000 total limit under OMPP, and for life and without limit under TRA.
- 50% of those requiring "long-term" care will receive benefits of \$1,000 per month, increasing at 4.5% per year; for five years under both OMPP and TRA
- The CPI, and hence the indexed monthly limit under TRA, will increase at an average rate of 4.5% per year.
- The estimated PY 92/93 medical frequency rates under OMPP and TRA are .64% and .62%, respectively.
- Costs will be incurred beginning six months following the accident, and the average accident will occur six months after the average policy is written in PY 92/93.
- Expected mortality for those requiring "long-term" care follows that of the general population in Canada, for an individual 30 years of age.
- ALAE and ULAE costs associated with care benefits are 9% of the assumed care costs.

- 10% of the medical claims for PY 92/93 will require "short-term" care and will incur care costs of \$2,500 (present dollars); 5% of the medical claims will incur care costs of \$5,000; 2.5% of the medical claims will incur care costs of \$10,000.

Methodology

The estimated cost for those requiring "long-term" care is derived by modeling the assumptions presented above. In so doing we find that those accident victims assumed to incur the full \$3,000/month limit reach the OMPP \$500,000 limit after 167 months. Under TRA for those accident victims assumed to incur the full \$3,000/month (indexed) limit, the care benefits are assumed to be incurred for life, subject to mortality.

Extending the assumed monthly care costs over the specified time periods, subjecting the projected costs to mortality considerations, and then discounting those costs at 8.5% per year results in the following average care cost per claim:

OMPP	\$160,000
TRA	\$405,000

We then convert these average loss severities to loss costs by multiplying by 1) the assumed frequency rates of .0032% and .0031%, respectively for OMPP and TRA; where,

$$\begin{aligned}.0032\% &= .0064 \times .005 \\ .0031\% &= .0062 \times .005\end{aligned}$$

and by 2) the assumed provision for ALAE and ULAE: 9% (1.09)

**Technical Appendix
Derivation of Estimated
Loss Costs for
Medical Benefits**

**Appendix 7
Exhibit 5
Page 3 of 8**

This results in the following estimated discounted loss costs for the "long-term" attendant care benefit (subject to small rounding differences):

OMPP	$\$160,000 \times .000032 \times 1.09 = \$5.58$
TRA	$\$405,000 \times .000031 \times 1.09 = \$13.69$

To these figures we then add the estimated cost for those requiring less extensive medical care:

OMPP:	$.0064 \times .10 \times \$2,500 \times 1.09$	=	\$1.74
	$.0064 \times .05 \times \$5,000 \times 1.09$	=	\$1.74
	$.0064 \times .025 \times \$10,000 \times 1.09$	=	\$1.74
TRA:	$.0062 \times .10 \times \$2,500 \times 1.09$	=	\$1.69
	$.0062 \times .05 \times \$5,000 \times 1.09$	=	\$1.69
	$.0062 \times .025 \times \$10,000 \times 1.09$	=	\$1.69
Total:	OMPP: \$10.80		
	TRA: \$18.76		

Rehabilitation

Assumptions

- "Extensive" rehabilitation will be provided at a claimant incidence rate of .5%.
- On average, those requiring "extensive" rehabilitation will incur the following incremental costs (exclusive of claim expenses):

- 1) physical, vocational, social rehabilitation of \$4,000 a month for one year beginning six months following the date of the accident; \$2,000 a month for one year beginning 18 months following the date of the accident; \$1,000 per month for one year beginning 30 months following the date of the accident; \$500 per month for one year beginning 42 months following the date of the accident; and \$200 a month thereafter up to 10 years under OMPP and for life under TRA;
 - 2) home, vehicle, workplace renovation of \$30,000 six months following the date of the accident, and \$4,000 every three years thereafter up to 10 years under OMPP and for life under TRA;
 - 3) \$300 a month for other goods and services, including equipment, supplies, transportation for 10 years under OMPP and for life under TRA.
- The average costs (presented above) for those requiring "extensive" rehabilitation will increase at the assumed long-term rate of change in the CPI of 4.5% per year.
 - Costs incurred under OMPP are limited to \$500,000
 - 53% of those requiring "extensive" rehabilitation will incur costs equal to 47% of the assumed average costs enumerated above; 27% will incur costs equal to 94% of the assumed average costs; 13% will incur costs equal to 188% of the assumed average costs; and 7% will incur costs equal to 375% of the assumed average costs.
 - 10% of the medical claims for PY 92/93 will require "less extensive" rehabilitation and will incur incremental costs (above what they currently incur under Pre-OMPP) of \$2,500 (in present dollars); 5% of the medical claims will incur incremental rehabilitation

costs of \$5,000 (in present dollars); 2.5% of medical claims will incur incremental rehabilitation costs of \$25,000 (in present dollars).

- The estimated PY 92/93 medical frequency rates under OMPP and TRA are .64% and 0.62%, respectively.
- Expected mortality for those requiring "extensive" rehabilitation follows that of the general population in Canada, for an individual 30 years of age.
- ALAE and ULAE costs associated with rehabilitation benefits are 9% of the assumed rehabilitation costs.

Methodology

There are two components to our estimated loss cost for the rehabilitation benefit: one is for those assumed to require "extensive" rehabilitation; the other is for those assumed to require "less extensive" rehabilitation.

The method applied to derive cost estimates for those assumed to require extensive rehabilitation follows that described for the "long-term" attendant care benefit. The assumed rehabilitation costs for each of the assumed four levels of "extensive" rehabilitation are increased at 4.5% per year. For OMPP, that is performed subject to a \$500,000 limit and a benefit period of 10 years. For TRA, no limits are applied.

The resulting average incremental discounted severities are as follows:

OMPP	\$120,000
TRA	\$220,000

Technical Appendix
Derivation of Estimated
Loss Costs for
Medical Benefits

Appendix 7
Exhibit 5
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We note that we make the assumption that these claimants would have received \$25,000 under Pre-OMPP, hence the severities displayed above are net of \$25,000 (discounted).

To convert these severities to loss costs we apply the assumed frequency rates, and a provision for ALAE and ULAE. That calculation results in the following estimated loss costs for those requiring extensive rehabilitation (subject to small rounding differences).

OMPP	$\$120,000 \times .000032 \times 1.09 = \$4.20$
TRA	$\$220,000 \times .000031 \times 1.09 = \$7.44$

For those assumed to required "less extensive" rehabilitation in PY 92/93, we multiply the assumed incremental severities by the assumed frequency rates by to arrive at estimated incremental loss costs:

OMPP	$\$2,500 \times .10 \times .0064 \times 1.09$
+	
	$\$5,000 \times .05 \times .0064 \times 1.09$
+	
	$\$25,000 \times .025 \times .0064 \times 1.09$
	$= \$ 7.85$

TRA	$\$2,500 \times .10 \times .0062 \times 1.09$
+	
	$\$5,000 \times .05 \times .0062 \times 1.09$
+	
	$\$25,000 \times .025 \times .0062 \times 1.09$
	$= \$ 7.61$

We note that the assumed incremental severities are valued in present dollars and hence the severity estimates are not discounted.

Combining the two sets of estimates, we arrive at total estimated incremental loss costs for rehabilitation of:

OMPP	\$12.05
TRA	\$15.05

Note on Assumed "Extensive" Rehabilitation Loss Distribution

The selected loss distribution for "extensive" rehabilitation is based on consideration of Personal Injury Protection (PIP) size of loss distribution for a sample of large claims published in the aforementioned AIRAC study entitled "Catastrophic No-Fault Auto Injury Claims."

We tested the OMPP results produced by the selected exponential distribution against a lognormal distribution (simulated) at the target average severity and a coefficient of variation (a measure of dispersion) of 1.0, and found the results to be similar (with all other assumptions unchanged). We further tested the OMPP results using a lognormal distribution with coefficients of variation of 2.0 and 3.0. The results (approximate) are as follows:

<u>C.V.</u>	<u>Average OMPP Incremental Discounted Net Severity</u>	<u>Estimated OMPP "Extensive" Rehabilitation Loss Cost</u>
1.0	\$120,000	\$4.20
2.0	\$100,000	\$3.49
3.0	\$85,000	\$2.96

So, the use of a more disperse distribution to estimate the relative costs between OMPP and TRA would add about \$1 to our estimated cost difference.

Supplementary Medical

Assumptions

- As a result of increased utilization and the broadening of coverage, base loss costs will increase by 20%.

Methodology

To derive our estimated cost for the supplementary medical benefit under OMPP and TRA, we applied the assumed increase in loss cost to the respective baseline loss costs (which are on a discounted basis and reflect ULAE, ALAE):

OMPP	$\$22.37 \times 1.2 = \$26.84$
TRA	$\$21.71 \times 1.2 = \$26.05$

APPENDIX 8

Technical Appendix
 Death Benefits
 Derivation of Product Adjustment Factors

Appendix 8
 Exhibit 1
 Page 1 of 1

Category of Compensable Death	Distribution*	Product Benefits		
		Pre-OMPP	OMPP	T R A**
(1) Married heads of household 18 - 64	22.5%	\$11,200	\$47,000	\$105,755
(2) Married spouse 18 - 64	22.5%	10,000	35,000	79,270
(3) Married heads of household 65+ (no dep.)	5.0%	10,000	35,000	52,250
(4) Married spouse 65+ (no dep.)	5.0%	10,000	35,000	52,250
(5) 65+ not married (no dep.)	7.0%	0	0	0
(6) 18 - 64 not married with dependant	4.0%	11,600	41,000	98,169
(7) 18 - 64 not married without dependant	16.0%	0	0	0
(8) Dependant children	18.0%	2,000	10,000	10,450
Weighted Average		\$6,594	\$25,390	\$52,663
Ratio to Pre-OMPP			3.85	7.99

Benefit Assumptions ***

Pre-OMPP	OMPP
(1) \$10,000 to surviving spouse + \$1,000 x 1.2 dependants	(1) \$25,000 to surviving spouse + \$10,000 x 2.2 dependants (including spouse)
(2) \$10,000 to surviving spouse	(2) \$35,000 to surviving spouse
(3) \$10,000 to surviving spouse	(3) \$25,000 to surviving spouse + \$10,000 x 1 dependant (spouse)
(4) \$10,000 to surviving spouse	(4) \$35,000 to surviving spouse
(5) \$0	(5) \$0
(6) \$10,000 to dependants + \$1,000 x 1.6 dependants	(6) \$25,000 to dependants + \$10,000 x 1.6 dependants
(7) \$0	(7) \$0
(8) \$2,000 to parent/guardian	(8) \$10,000 to parent/guardian

T R A

- (1) $(\$95,830 + \$10,450 \times 1.2) \times .94(\% \text{ working}) + (\$52,250 + \$10,450 \times 1.2) \times .06(\% \text{ neither working})$
- (2) $\$95,830 \times .62(\% \text{ working}) + \$52,250 \times .38(\% \text{ not working})$
- (3) \$52,250 to surviving spouse
- (4) \$52,250 to surviving spouse
- (5) \$0
- (6) $(\$95,830 + \$10,450 \times 1.6) \times .67(\% \text{ working}) + (\$52,250 + \$10,450 \times 1.6) \times .33(\% \text{ not working})$
- (7) \$0
- (8) \$10,450 to parent/guardian

* See Exhibit 2

** All TRA figures assume death benefits will be indexed on average for 1 year at 4.5%

*** See Exhibits 3 through 5 and Actuarial Report, Section 5

Technical Appendix
Death Benefits
Derivation of Death Distribution

Appendix 8
Exhibit 2
Page 1 of 4

(1)		(2)		(3)	
Adults	65%	{	70% Married ==> 45%	{ 50% Head of Household ==>	22.5%
				{ 50% Spouse ==>	22.5%
Seniors	17%	{	30% Unmarried ==> 20%	{ 19% With Dependant ==>	4%
				{ 81% Without Dependant ==>	16%
Dependant Children	18%	{	56% Married ==> 10%	{ 50% Head of Household ==>	5%
				{ 50% Spouse ==>	5%
		{	44% Unmarried ==> 7%		

Notes:

- (1) See Page 2
- (2) See Page 3
- (3) For Head of Household/Spouse percentages, a 50/50 split was assumed. For With/Without Dependant percentages, see Page 4

Technical Appendix
Death Benefits
Derivation of Death Distribution

Appendix 8
Exhibit 2
Page 2 of 4

Persons Killed by Age Groups 1989

Category of Persons	0-4	5-9	10-15	16	17	18	19	20	21-24	25-34	35-44	45-54	55-64	65-74	75+	Total
Driver	0	0	3	10	13	12	21	26	81	179	98	48	57	46	31	625
Passenger	18	11	25	14	15	20	19	12	39	65	29	18	27	38	23	373
Pedestrian	1	10	10	0	2	5	1	5	9	13	23	14	14	25	29	161
Total	19	21	38	24	30	37	41	43	129	257	150	80	98	109	83	1,159
Dependant Children (Age 0-17, 50% of Age 18-21)							209	18%								
Adults (50% of Age 18-21, Age 22-64)							758	65%								
Seniors (Age 65+)							192	17%								
Total							1,159	100%								

Source: "1988 - 1989 Ontario Road Safety Annual Report," Table 2.2

William M. Mercer Limited

Marital Status

Age Group	Total	Never Married	Widowed	Divorced	Married & Separated
18	134,485	130,190	65	50	4,180
19	139,390	130,450	60	65	8,815
20-24	814,605	585,790	530	2,520	225,765
25-29	821,130	273,015	1,105	14,385	532,625
30-34	761,979	119,831	2,088	28,185	611,875
35-39	732,288	67,730	3,835	36,208	624,515
40-44	584,630	39,035	5,885	32,595	507,115
45-49	488,651	26,485	9,585	26,945	425,636
50-54	461,440	23,170	17,245	24,065	396,960
55-59	456,655	23,695	31,790	21,810	379,360
60-64	429,915	22,640	52,625	16,530	338,120
18-64	5,825,168	1,442,031	124,813	203,358	4,054,966
65+	992,695	67,555	344,840	20,600	559,700

Percent Married & Separated - Ages 18-64	70%
Percent Unmarried - Ages 18-64	30%
Percent Married & Separated - Age 65+	56%
Percent Unmarried - Age 65+	44%

Source: 1986 Canadian Census, Province of Ontario data

Technical Appendix**Death Benefits****Derivation of Unmarried Adult With/Without Dependant Percentages****Appendix 8****Exhibit 2****Page 4 of 4**

	<u>Single Parents</u>			<u>Non-Family</u>	<u>Total Unmarried Adults</u>
	<u>Male</u>	<u>Female</u>	<u>Total</u>		
	51,845	238,805	290,650	1,258,510	1,549,160
Percent of Total Unmarried Adults			19%	81%	100%

Technical Appendix

Death Benefit

Calculation of The Road Ahead Death Benefit

Subject to \$50,000 Minimum and \$200,000 Maximum

Appendix 8

Exhibit 3

Page 1 of 1

<u>Distribution</u>	<u>Net Weekly Income</u>	<u>Net Annual Income</u>	<u>Death Benefit</u>	<u>Death Benefit Subject to Min/Max</u>
(1)	(2)	(3)	(4)	(5)
7.2%	\$26.40	\$1,372.85	\$4,942.26	\$50,000.00
5.8%	56.32	2,928.75	10,543.50	50,000.00
5.1%	91.52	4,759.22	17,133.18	50,000.00
4.7%	126.72	6,589.69	23,722.87	50,000.00
4.0%	161.93	8,420.15	30,312.56	50,000.00
3.9%	197.13	10,250.62	36,902.24	50,000.00
6.1%	246.41	12,813.28	46,127.80	50,000.00
9.7%	316.81	16,474.22	59,307.17	59,307.17
11.3%	405.38	21,079.60	75,886.56	75,886.56
9.3%	495.95	25,789.44	92,841.97	92,841.97
14.9%	640.06	33,283.23	119,819.63	119,819.63
5.2%	827.27	43,018.23	154,865.65	154,865.65
3.9%	931.70	48,448.18	174,413.45	174,413.45
2.7%	1,035.20	53,830.50	193,789.79	193,789.79
2.1%	1,132.30	58,879.39	211,965.82	200,000.00
2.0%	1,254.04	65,210.32	234,757.15	200,000.00
0.8%	1,432.26	74,477.29	268,118.23	200,000.00
0.4%	1,641.70	85,368.50	307,326.60	200,000.00
0.2%	1,896.35	98,610.12	354,996.43	200,000.00
0.1%	2,066.68	107,467.39	386,882.60	200,000.00
0.2%	2,525.73	131,337.74	472,815.85	200,000.00
0.1%	3,212.16	167,032.54	601,317.14	200,000.00
0.1%	3,848.35	200,114.45	720,412.00	200,000.00
0.0%	4,995.54	259,768.17	935,165.40	200,000.00
0.1%	7,969.54	414,416.12	1,491,898.03	200,000.00
Average	\$465.33	\$24,197.09	\$87,109.51	\$91,703.65

Notes by Column:

- (1) see Appendix 6, Exhibit 8
- (2) see Appendix 6, Exhibit 8
- (3) (2) x 52 (# of weeks)
- (4) (3) x 3.6 (benefit factor)
- (5) (4) subject to minimum benefit of \$50,000 and maximum benefit of \$200,000

Technical Appendix
 Death Benefits
 Derivation of Average Number of Dependants

Appendix 8
 Exhibit 4
 Page 1 of 1

<u>Family Structure</u>	<u>2 Parent Families</u>	<u>Single Parent Families</u>	<u>All Families</u>
No Children	816,525	0	816,525
1 Child	464,950	165,845	630,795
2 Children	577,360	88,810	666,170
3+ Children*	296,155	36,100	332,255
Total Excluding No Children	1,338,465	290,755	1,629,220
Overall Total	2,154,990	290,755	2,445,745
Average Excluding No Children	2.0	1.6	1.9
Overall Average	1.2	1.6	1.3

* Assumed average of 3.5 children

Source: 1986 Canadian Census, Province of Ontario data

Labour Force Participation of Parents With Children
Under Age 18 Living at Home, Ontario 1985

Two Parent Families:

(1) Husband and Wife Both in Labour Force	61.9%
(2) Husband Only in Labour Force	29.8%
(3) Neither in Labour Force	6.0%
(4) Wife Only in Labour Force	2.2%

Head of Household in Labour Force (1) + (2) + (4) 94.0%

Head of Household Not in Labour Force (3) 6.0%

Spouse in Labour Force (1) 61.9%

Spouse Not in Labour Force (2) + (3) + (4) 38.1%

Single Parent Families:

(5) Lone Mother in Labour Force	52.3%
(6) Lone Mother Not in Labour Force	30.1%
(7) Lone Father in Labour Force	14.2%
(8) Lone Father Not in Labour Force	3.4%

Lone Parent in Labour Force (5) + (7) 66.5%

Lone Parent Not in Labour Force (6) + (8) 33.5%

Source: Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario,
Number 1, Figures 7 and 8.

APPENDIX 9

A. Background

In 1990 the owner of a private passenger vehicle in Quebec paid \$113.75 (\$90.82 at the time of vehicle registration; \$22.93 at the time of receiving a driver's license) for public insurance. Further, the 1989 Quebec loss costs were reported to be approximately \$144.15. These figures are not directly comparable to our estimates of Ontario accident benefits loss costs based on Ontario loss experience. However, it is clear that even if the figures are adjusted to make them comparable and to adjust for coverage, demographic, economic, and judicial differences between Ontario and Quebec, the gap between our estimates of Ontario loss costs and the actual reported 1989 Quebec loss costs may not be fully accounted for. Therefore, we decided to undertake a more detailed analysis of the loss costs incurred under the Quebec public automobile insurance system.

In order to achieve a better understanding of the source of differences between estimated Ontario loss costs and actual Quebec loss costs, we decided to use what we refer to as the Quebec Build-Up approach. With this approach, we start with the actual Quebec loss experience, which is reflective of the Quebec public insurance system and the Quebec demographic, economic, administrative and judicial environment. We then attempt to translate this experience to the Ontario environment. Simultaneously we develop, for comparison purposes, an Ontario-based estimate of the loss costs for the Quebec-type product.

B. Data and Information Relied Upon

For the purpose of this study, we have relied primarily on information and data provided by the Société de l'assurance automobile du Québec (the Société). This includes review of the Société's:

- 1989 Annual Report
- 1989 loss reserve study
- 1991 compensation table
- pamphlet titled "The Insurance Policy For All Quebecers"
- a presentation given by Mr. Pierre Gauthier, Senior Public Relations Officer, on January 30, 1991
- a document containing the 1991 safety program priorities
- a document providing a preliminary analysis of the law changes that became effective on January 1, 1990
- extracts from reports of paid losses and loss reserves by type of benefit
- various published studies containing information on accident victims

In addition, Mr. Wright and Mr. Zubulake met with Mr. Gauthier and Mr. Marc Marois (Actuary, Société) on May 21, 1991 and Mr. Wright met with Mr. Marois on May 22, 1991. Further, Mr. Wright and Mr. Zubulake have had numerous telephone discussions with Mr. Gauthier, Mr. Marois, and Mr. Wayne Scullion (Actuary, Société).

C. Analysis

Exhibit 1, pages 1 through 6, displays the Quebec Build-up for the following Quebec benefits: disability, personal care, rehabilitation, medical and other expenses, death benefits, and funeral services. For each type of benefit, we start by displaying Quebec's incurred losses and resultant loss costs for accident year 1989. The loss costs are then adjusted to policy year 1991 levels, using factors, where applicable, to reflect the impact of the January 1, 1990 law change and the automatic annual increases in benefit levels. The loss costs are then adjusted further, to an Ontario basis, to reflect Ontario's accident rates, wage levels, and minor differences in the benefit levels. Finally, they are adjusted to reflect the fact that the Quebec loss experience is for all vehicle types, and to include a provision for unallocated loss adjustment expense (ULAE).

The individual exhibits for each benefit are intended to be self-explanatory, and are not discussed further.

It is important to note that the Quebec system is more than merely an insurance system. The Société is responsible for driver's licensing, registration, rehabilitation, and driving and highway safety programs, in addition to having responsibility for the public insurance system. The Société is thus able to maintain strict control over all aspects of traffic accidents. As a result, the low costs achieved in Quebec should be considered to be the result of an integrated approach to reducing the costs of accidents rather than solely the result of the no-fault insurance system.

Further, based on our discussions with representatives of the Société, our understanding is that the insurance system is administered with very strict controls over the awarding of benefits. Therefore, the savings achieved by Quebec may be greater than the savings that could be expected under other types of claims administration systems.

Several major items, that have an impact on all or most of the benefits, are discussed in the following paragraphs.

1. 1989 reserves

We rely on the Société loss reserve estimates, as of December 31, 1989, to determine the actual 1989 accident year losses by benefit-type. Representatives of the Société have stated that, in their opinion, loss reserves as recorded at December 31, 1989 were adequate to provide for the costs associated with all accidents incurred through December 31, 1989.

2. Impact of 1990 law changes

We rely on the Société 1989 estimate of the impact of the law changes. Although the Société now has more than one year of loss experience under the new law, it still may be too soon to reevaluate the impact of the law. To our knowledge, the Société has not yet updated the actuarial analysis of the new law.

3. Accident frequencies

We adjust the Quebec data to reflect the Ontario level of accident frequencies. The adjustment factors that we use are based on 1989 accident information as published by Transport Canada in a pamphlet titled "1989 Canadian Motor Vehicle Traffic Accident Statistics." This publication indicates that Ontario's fatality rate per registered vehicle is 34.4% less than Quebec's fatality rate, and

that Ontario's injury rate is 23.5% greater than Quebec's.

4. Wage differential

We assume that Ontario's average income is 17.5% greater than Quebec's, based on information contained in "1990 Taxation Statistics," a publication of Revenue Canada.

5. Adjustment for vehicle mix

In consideration of the fact that the Quebec loss experience upon which our estimates are based is loss experience for all vehicles types (private passenger, motorcycles, taxicabs, buses, trucks) we decrease, by 20%, the estimates that would otherwise apply. The adjustment of 20% is based on Quebec's distribution of vehicles by type and on their insurance charges by type of vehicle, which we use as a proxy for loss costs by type of vehicle.

6. Adjustment to include ULAE

The Quebec data excludes administration expense, which includes ULAE. Therefore, we increase the loss costs based on Quebec data by a factor of 1.067 to include provision for ULAE.

D. Description of benefits

Each benefit is described briefly in the following paragraphs. Where the current benefits differ significantly from the benefits prior to January 1, 1990 these differences are also discussed. The benefits under the Quebec-type product are identical to Quebec benefits, except as noted below for disability benefits, and for the fact that we have not reflected Quebec's permanent impairment benefit.

1. Income

This benefit actually consists of three components:

- income replacement benefits
- reimbursement of expenses for the care of dependants
- lump sum payments to students who had to miss a semester or year of school

The 1990 law changes reduced benefits as follows:

- minimum income replacement benefits are eliminated
- income replacement benefits are phased out after age 65 and integration with Old Age Security benefits disappears
- for unemployed victims, income replacement benefits are deferred for 180 days

The benefits provided under the Quebec-type product include the following.

a. Wage Earners

After a one week waiting period, disabled wage earners receive an Income Replacement Benefit (IRB), reduced for any income recoveries under QPP (Quebec plan income benefits are primary as to any private income plans). The IRB is based on 90% of net income (net of federal and provincial income taxes, QPP contributions and UI premium), subject to a maximum gross annual income of \$42,000 in 1991.

From age 65 through age 67, the IRB is reduced gradually by 25% each year (i.e., 75%, 50% and 25% of IRB at age 65, 66 and 67, respectively). Benefits cease at age 68.

The annual income used in calculating the IRB and the maximum gross annual income are indexed to the CPI.

After 104 weeks of disability, benefits cease unless the insured is unable to perform any employment for which he is reasonably suited. (Benefits may continue while the person is still under a rehabilitation program.)

b. Unemployed

During the first six months of disability, the insured receives the greater of Unemployment Insurance benefits lost, and an IRB based on 90% of net income from employment he could have held (subject to a maximum gross annual income of \$42,000).

After the first six months of disability, unemployed persons receive an IRB based on 90% of presumed net income (subject to a maximum gross annual income of \$42,000), as determined by the Société.

c. Primary Care Givers

After six months of disability, unemployed primary caregivers receive either an IRB based on 90% of presumed fulltime net income or the dependant care benefit for non-wage earners. The dependant care benefit is payable until the last child is 16 (for the the lifetime of a child if the child is permanently disabled).

All primary caregiver benefits are indexed to the CPI.

d. **Dependant Care Benefits**

For unemployed primary caregivers the child care benefit consists of the following weekly benefits in 1991:

<u>Number of Dependants</u>	<u>Weekly Benefit</u>
1	\$262
2	\$293
3	\$325
4 or more	\$356

After six months of disability, the disabled non-wage earner may choose to receive the primary care giver benefit instead.

For disabled wage earners, the child care benefit consists of reimbursement for incurred child care expenses up to the following per week maximums:

<u>Number of Dependants</u>	<u>Maximum Weekly Benefit</u>
1	\$ 79
2	\$105
3	\$131
4 or more	\$157

Dependant care benefits for disabled wage and non-wage earners are indexed to the CPI.

e. Students

Students receive \$3,144 for each year of elementary school and \$5,764 for each year of secondary school that is lost due to the disability. Post-secondary school students receive \$5,764 per lost term, up to a maximum of \$11,528 per year. Students who worked part-time also receive an IRB based on their part-time work in addition to the lump sum benefits.

Those students who were disabled prior to age 16 receive lost school benefits to age 16. Upon reaching age 16, the student receives an IRB based on 90% of net average provincial earnings. Those secondary school students disabled after age 16 receive lost school benefits to a presumed graduation date, at which time they begin receiving the average IRB.

Post-secondary school students receive the lost school benefits to a presumed graduation date. After a 1 week waiting period, they also receive the average IRB.

All student benefits are indexed to the CPI.

f. Persons over age 65

Persons 65 years old and over receive an IRB for 4 years if they are working at the time of the accident. This IRB will reduce gradually by 25% per year.

2. Death benefits

This provides lump sum payments to the spouse and dependants of deceased victims.

The 1990 law changes reduced benefits by replacing pension benefits with lump sum payments.

3. Funeral Expenses

This provides a payment to the estate of the deceased.

In 1991 the Quebec benefit was \$3,144.

4. Personal care

This provides for the cost of at-home care for injured victims.

The 1990 law changes increased benefits by increasing the allowable expenses under this benefit.

In 1991 the Quebec benefit was limited to a maximum of \$524 per week. The Quebec-type benefits are also limited to \$524 per week, but do not reflect the limits and controls that exist under the Quebec plan (as is also the case for rehabilitation).

5. Rehabilitation

This provides for such benefits as vocational training, special equipment, and modifications to automobiles, housing, and the work environment in order to expedite the return to work.

6. Medical and other

This provides for all medical, hospital, and related costs that are not covered by the Quebec health plan. (Each year by law, the Société pays the government of Quebec an amount estimated to represent the medical costs of traffic accident victims. This was \$74.5 million in 1991.)

This also includes incidental costs such as transportation to and from medical treatment facilities and an allowance for damaged clothing of up to \$400 per victim.

E. Exhibits

Exhibit 1 shows the calculations of the build-up of the Quebec loss costs. In Exhibit 2 we derive the Ontario-based estimates of the Quebec-type product ("medical" includes medical and other expenses, personal care, and rehabilitation). Exhibit 3 compares the cost estimates resulting from the Quebec Build-Up and the Ontario-based estimate of the Quebec-type product. There are significant differences between the loss cost estimates resulting from the Quebec Build-Up and those obtained from the Ontario-based costing, in particular for income benefits. Based on this difference we derive external adjustment factors ranging from .49 for income benefits to 1.16 for death benefits.

In Exhibit 4 we apply the external adjustment factors in the manner discussed in Actuarial Report, Section 5, Subsection 3 to derive final loss cost estimates for the accident benefits coverages under OMPP. In Exhibit 5 we adjust our OMPP loss cost estimates for bodily injury liability, uninsured motorist, and underinsured motorist coverages to reflect the resulting small change in the accident benefits offset. In a similar fashion we derive final loss cost estimates for TRA in Exhibits 6 and 7.

Exhibits 8-10 provide supporting documentation for the Ontario-based loss cost estimates of the Quebec-type product.

Technical Appendix
Quebec Build-Up

Appendix 9
Exhibit 1
Page 1 of 6

Quebec Build-Up - Income

		<u>Sources/Notes</u>
1. Registered vehicles:	3,884,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$34,885,000	M. Marois
3. Amount reserved for AY 1989 as of 12/31/89:	\$186,300,000	M. Marois
4. Incurred losses for accident year 1989: (2)+(3)	\$221,185,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$56.95	Calculation
6. Adjustment factor for revised 1990 benefit schedules:	0.930	W. Scullion; @12/31/89 estimated decreases from -2% to -12% and selected -7%.
7. Adjustment factor for automatic benefit level changes, AY90 to PY91:	1.073	1991 Indexation rate for 1.5 years.
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$56.82	Calculation
9. Adjustment factor to reflect Ontario claim frequencies:	1.235	Canadian Motor Vehicle Traffic Accident Statistics; ratio of injury rates.
10. Adjustment factor to reflect wage differences between Ontario and Quebec:	1.175	Based on "Taxation Statistics; 1990".
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$70.38	Calculation

Quebec Build-Up - Personal Care

		<u>Sources/Notes</u>
1. Registered vehicles:	3,884,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$219,000	M. Marois
3. Amount reserved for AY 1989 as of 12/31/89:	\$26,100,000	M. Marois
4. Incurred losses for accident year 1989: (2)+(3)	\$26,319,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$6.78	Calculation
6. Adjustment factor for revised 1990 benefit schedules:	2.555	Per W. Scullion, +30% of all costs except IRR, Death, and Impairment costs.
7. Adjustment factor for automatic benefit level changes, AY90 to PY91:	1.073	1991 Indexation rate for 1.5 years.
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$18.58	Calculation
9. Adjustment factor to reflect Ontario claim frequencies:	1.235	Canadian Motor Vehicle Traffic Accident Statistics; ratio of injury rates.
10. Adjustment factor to reflect wage differences between Ontario and Quebec:	1.175	Based on "Taxation Statistics; 1990".
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$23.01	Calculation

Quebec Build-Up - Rehabilitation

		<u>Sources/Notes</u>
1. Registered vehicles:	3,884,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$350,000	M. Marois
3. Amount reserved for AY 1989 as of 12/31/89:	\$24,700,000	M. Marois
4. Incurred losses for accident year 1989: (2)+(3)	\$25,050,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$6.45	Calculation
6. Adjustment factor for revised 1990 benefit schedules:	1.000	No changes for this benefit.
7. Adjustment factor to reflect inflationary increases from AY89 to PY91:	1.124	1991 Indexation rate for 2.5 years.
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$7.25	Calculation
9. Adjustment factor to reflect Ontario claim frequencies:	1.235	Canadian Motor Vehicle Traffic Accident Statistics; ratio of injury rates.
10. Adjustment factor to reflect wage differences between Ontario and Quebec:	1.100	This is a partial reflection of wage level differences.
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$8.41	Calculation

Quebec Build-Up - Medical and Other Expenses

		<u>Sources/Notes</u>
1. Registered vehicles:	3,884,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$54,947,000	M. Marois; includes payments to Federal government.
3. Amount reserved for AY 1989 as of 12/31/89:	\$26,400,000	M. Marois; includes reserves for future payment to Federal government.
4. Incurred losses for accident year 1989: (2)+(3)	\$81,347,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$20.94	Calculation
6. Adjustment factor for revised 1990 benefit schedules:	1.000	No changes for this benefit.
7. Adjustment factor to reflect inflationary increases from AY89 to PY91:	1.124	1991 Indexation rate for 2.5 years. (1989, \$67.9; 1990, \$71.4; 1991, \$74.5)
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$23.55	
9. Adjustment factor to reflect Ontario claim frequencies:	1.235	Canadian Motor Vehicle Traffic Accident Statistics; ratio of injury rates.
10. Adjustment factor to reflect other differences between Ontario and Quebec:	0.218	Excludes payment to Government; adjusts for wage differential.
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$5.41	Calculation

Quebec Build-Up - Death

		<u>Sources/Notes</u>
1. Registered vehicles:	3,894,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$5,017,000	M. Marois
3. Amount reserved for AY 1989 as of 12/31/89:	\$70,600,000	M. Marois
4. Incurred losses for accident year 1989: (2)+(3)	\$75,617,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$19.47	Calculation
6. Adjustment factor for revised 1990 benefit schedules:	0.700	W. Scullion
7. Adjustment factor for automatic benefit level changes, AY90 to PY91:	1.073	1991 Indexation rate for 1.5 years.
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$14.62	Calculation
9. Adjustment factor to reflect Ontario claim frequencies:	0.656	Canadian Motor Vehicle Traffic Accident Statistics; ratio of death rates.
10. Adjustment factor to reflect wage differences between Ontario and Quebec:	1.080	This is a partial reflection of wage level differences.
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$8.84	Calculation

Technical Appendix
Quebec Build-Up

Appendix 9
Exhibit 1
Page 6 of 6

Quebec Build-Up - Funeral

		<u>Sources/Notes</u>
1. Registered vehicles:	3,884,080	Dossier STATISTIQUE; BILAN 1989 - TOME 1
2. Amount paid for AY 1989 as of 12/31/89:	\$2,536,000	M. Marois
3. Amount reserved for AY 1989 as of 12/31/89:	\$1,200,000	M. Marois
4. Incurred losses for accident year 1989: (2)+(3)	\$3,736,000	Calculation
5. Loss cost for accident year 1989: (4)/(1)	\$0.96	Calculation
6. Adjustment factor for revised benefit schedules:	1.000	No changes for this benefit.
7. Adjustment factor for automatic benefit level changes:	1.079	1989: \$2,915 1991: \$3,144
8. Estimated loss cost for policy year 1991: (5)x(6)x(7)	\$1.04	Calculation
9. Adjustment factor to reflect Ontario claim frequencies:	0.656	Canadian Motor Vehicle Traffic Accident Statistics; ratio of death rates.
10. Adjustment factor to reflect other differences between Ontario and Quebec:	1.000	
11. Adjustment factor to reflect mix of vehicle types and ULAE [.800 x 1.067]:	0.854	Quebec data are for all vehicle types and do not include ULAE.
12. Estimated Ontario private passenger loss cost for policy year 1991: (8)x(9)x(10)x(11)	\$0.55	Calculation

Technical Appendix
Derivation of Ontario-based Estimated Loss Costs
of Quebec-type Product

Appendix 9
Exhibit 2
Page 1 of 1

	<u>Income</u>	<u>Medical</u>	<u>Death</u>	<u>Funeral</u>	<u>Quebec</u>
(1) 30/70 Weighted Loss Cost	\$20.78	\$14.76	\$1.12	\$0.20	\$0.35
(2) Annual Severity Trend	5.7%	19.1%	0.0%	0.0%	5.0%
(3) Trend Factor	1.136	1.495	1.000	1.000	1.119
(4) Trended Loss Cost	\$23.61	\$22.07	\$1.12	\$0.20	\$0.39
(5) ULAE Factor	1.067	1.067	1.067	1.067	1.067
(6) Discount Factor	0.829	0.829	0.920	0.931	0.727
(7) Discounted Loss Cost	\$20.88	\$19.52	\$1.10	\$0.20	\$0.30
(8) Ontario-Based Estimated Loss Cost of Quebec-type Product	\$143.50	\$57.86	\$7.63	\$0.62	\$0.00

Notes:

- (1) From Actuarial Report, Exhibit AR-4
- (2) Selected long-term severity trend, from Appendix 3, Exhibit 2
- (3) Factor to reflect severity trend to policy year 1991 (2.3 years)
- (4) (1) x (3)
- (5) From Appendix 4, Exhibit 1
- (6) From Appendix 2, Exhibit 2
- (7) (4) x (5) x (6)
- (8) Income: From Exhibit 10
Medical: From Exhibit 8
Death: Derived from Exhibit 9
Funeral: From Exhibit 8
Quebec: From Exhibit 8

Technical Appendix
Derivation of External Adjustment Factor

Appendix 9
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Accident Benefits	Ontario-based Estimated Loss Cost For the Quebec-type Product	Quebec-based Estimated Loss Cost	External Adjustment Factor
(1)	(2)	(3)	(4)
Income	\$143.50	\$70.38	0.49
Medical	57.86	36.83	0.64
Death	7.63	8.84	1.16
Funeral	0.62	0.55	0.89
Quebec	0.00	0.00	1.00

Notes:

- (2) From Exhibit 2
- (3) From Exhibit 1
- (4) (3) / (2)

Technical Appendix
Derivation of Final Loss Cost Estimates
For Accident Benefits Under OMPP

Appendix 9
Exhibit 4
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Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	OMPP Threshold Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$70.39	0.49	\$34.49	0.321	\$62.61
Medical	49.69	0.64	31.80	0.321	45.81
Death	3.54	1.16	4.11	0.321	3.66
Funeral	0.51	0.89	0.45	0.321	0.50
Quebec	0.15	1.00	0.15	0.321	0.15
Accident Benefits	\$124.28		\$71.00		\$112.73

Notes:

- (2) From Actuarial Report, Section 5, Subsection 2
- (3) From Exhibit 3
- (4) (2) x (3)
- (5) From Appendix 5, Exhibit 2 [(24) / (1)]
- (6) $(2) \times (5) \wedge 0.5 + (1 - (5) \wedge 0.5) \times ((2) + (4)) / 2$
(subject to small rounding differences)

**Technical Appendix
External Adjustments**

**Calculation of Final Estimated Bodily Injury Liability, Uninsured
Motorist, and Underinsured Motorist Loss Cost Under OMPP**

**Appendix 9
Exhibit 5
Page 1 of 4**

(1) Bodily injury liability adjusted baseline loss cost	\$350.41
(2) Uninsured motorist adjusted baseline loss cost	\$28.90
(3) Underinsured motorist adjusted baseline loss cost	\$3.03
(4) Portion of uninsured motorist adjusted baseline loss cost attributed to bodily injury liability (balance attributed to property damage)	\$25.14
(5) Bodily injury liability loss penetration level	38.7%
(6) Uninsured motorist loss penetration level	30.3%
(7) Underinsured motorist loss penetration level	69.1%
(8) Percentage of losses attributed to out-of-province accidents	2.0%
(9) Bodily injury liability, uninsured motorist - bodily injury, and underinsured motorist discount factor under Pre-OMPP product	0.727
(10) Bodily injury liability discount factor under OMPP product	0.690
(11) Uninsured motorist - bodily injury liability discount factor under OMPP product	0.690
(12) Underinsured motorist discount factor under OMPP product	0.727
(13) Total Pre-OMPP adjusted baseline loss cost for accident benefits	\$45.61
(14) Total OMPP adjusted loss cost for accident benefits reflecting external adjustments	\$112.73
(15) Accident benefits offset utilization level	63.0%

Technical Appendix
External Adjustments

Calculation of Final Estimated Bodily Injury Liability, Uninsured
Motorist, and Underinsured Motorist Loss Cost Under OMPP

Appendix 9
Exhibit 5
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(16) Effect of elimination of the collateral source rule	3.0%
(17) Estimated bodily injury liability loss cost under OMPP prior to application of accident benefits offset	\$129.36
(18) Estimated uninsured motorist loss cost under OMPP prior to application of accident benefits offset	\$11.14
(19) Estimated underinsured motorist loss cost under OMPP prior to application of accident benefits offset	\$2.05
(20) Total accident benefits offset	\$15.50
(21) Accident benefits offset allocated to bodily injury liability	\$14.45
(22) Accident benefits offset allocated to uninsured motorist	\$0.82
(23) Accident benefits offset allocated to underinsured motorist	\$0.23
(24) Estimated bodily injury liability loss cost under OMPP.	\$114.91
(25) Estimated uninsured motorist loss cost under OMPP.	\$10.31
(26) Estimated underinsured motorist loss cost under OMPP.	\$1.82

**Technical Appendix
External Adjustments**

**Calculation of Final Estimated Bodily Injury Liability, Uninsured
Motorist, and Underinsured Motorist Loss Cost Under OMPP**

**Appendix 9
Exhibit 5
Page 3 of 4**

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) From Actuarial Report, Section 5, Subsection 2.
- (3) From Actuarial Report, Section 5, Subsection 2.
- (4) Based on a review of insurance company rate filings, 90% of uninsured motorist losses are assumed to be related to bodily injury liability. The 90-10 split was applied prior to the application of ULAE, GST, and discount factors in deriving the uninsured motorist - bodily injury baseline loss cost.
- (5)-(7) These figures represent the estimated percentage of bodily injury liability, uninsured motorist - bodily injury, and underinsured motorist losses under a Pre-OMPP tort environment, that would continue to be paid under OMPP. The estimates are based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in Actuarial Report, Section 5, Subsection 2. The figures also reflect the application of a 5% discount rate in determining prejudgment interest for non-economic losses.
- (8) Based on Osborne Inquiry findings (1.1%), and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (9) From Appendix 2, Exhibit 2.
- (10) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the remaining bodily injury liability claims under OMPP will take approximately 8 months longer to settle than the bodily injury liability claims under Pre-OMPP. The average discount factor under OMPP is, therefore, $.727 / (1.085 ^ .67)$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (11) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the remaining uninsured motorist - bodily injury liability claims under OMPP will take approximately 8 months longer to settle than the uninsured motorist - bodily injury claims under Pre-OMPP. The average discount factor under OMPP is, therefore, $.727 / (1.085 ^ .67)$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (12) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, the settlement period will not change for underinsured motorist claims under OMPP. We recognize that by virtue of our estimated Pre-OMPP discount factor for underinsured motorist, we are implicitly assuming that bodily injury liability and uninsured motorist claims will take longer to settle than underinsured motorist claims. This anomaly, however, is not viewed as material.
- (13) From Actuarial Report, Section 5, Subsection 2.
- (14) From Exhibit 4.

Technical Appendix
External Adjustments

Calculation of Final Estimated Bodily Injury Liability, Uninsured
Motorist, and Underinsured Motorist Loss Cost Under OMPP

Appendix 9
Exhibit 5
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Notes:

- (15) Based on Osborne Inquiry survey findings, 70% of drivers are assumed to be not-at-fault. We judgmentally tempered this figure by 10% to recognize possible slippage in either the 70% estimate or in the assumed one-dollar-for-one-dollar offset assumptions. See Actuarial Report, Section 5, Subsection 2 for additional discussion of the accident benefits offset.
- (16) Based on Osborne Inquiry findings (study performed by Eckler Partners Ltd.) that eliminating the collateral source rule will reduce past and future wage losses by 19% and 6%, respectively. The 3.0% figure is derived by applying the 19% and 6% to the estimated percentage of the OMPP bodily injury loss cost attributed to past wage loss (6%) and future wage loss (26%):
 $.19 \times .06 + .06 \times .26 = 3\%$ (rounded).
- (17) $(1) \times (5) \times (1 - (8)) \times (10) / (9) \times (1 - (16)) + (8) \times (1)$
- (18) $(4) \times (6) \times (1 - (8)) \times (11) / (9) \times (1 - (16)) + (8) \times (4) + (2) - (4)$
- (19) $(3) \times (7) \times (1 - (8)) \times (12) / (9) \times (1 - (16)) + (8) \times (3)$
- (20) $(15) \times ((17) + (18) - ((2) - (4)) + (19)) / ((1) + (4) + (3)) \times ((14) - (13))$
- (21) $(17) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (22) $((18) - ((2) - (4))) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (23) $(19) / ((17) + (18) - ((2) - (4)) + (19)) \times (20)$
- (24) $(17) - (21)$
- (25) $(18) - (22)$
- (26) $(19) - (23)$

Technical Appendix
Derivation of Final Loss Cost Estimates
For Accident Benefits Under TRA

Appendix 9
Exhibit 6
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Accident Benefits	Ontario-based Estimated Loss Costs	External Adjustment Factor	Quebec-based Estimated Loss Costs	TRA Deductible Loss Penetration Level	Final Estimated Loss Costs
(1)	(2)	(3)	(4)	(5)	(6)
Income	\$113.07	0.49	\$55.40	0.284	\$99.60
Medical	59.86	0.64	38.31	0.284	54.83
Death	7.19	1.16	8.34	0.284	7.46
Funeral	1.00	0.89	0.89	0.284	0.97
Quebec	0.08	1.00	0.08	0.284	0.08
Accident Benefits	\$181.20		\$103.03		\$162.94

Notes:

- (2) From Actuarial Report, Section 5, Subsection 2
- (3) From Exhibit 3
- (4) (2) x (3)
- (5) From Exhibit 7, Row (2)
- (6) $(2) \times (5) \div 0.5 + (1 - (5) \div 0.5) \times ((2) \div (4)) \div 2$

Technical Appendix
Calculation of Final Estimated Bodily Injury Loss Cost
Under TRA

Appendix 9
Exhibit 7
Page 1 of 3

(1) Bodily injury liability adjusted baseline cost	\$342.39
(2) Bodily injury liability loss penetration level	28.4%
(3) Percentage of losses attributed to out-of-province accidents	2.0%
(4) Bodily injury liability discount factor under pre-OMPP product	0.727
(5) Bodily injury liability discount factor under TRA product	0.690
(6) Estimated bodily injury loss cost under TRA	\$97.29

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) This figure represents the estimated percentage of bodily injury losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (3) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (4) From Appendix 2, Exhibit 2.
- (5) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, bodily injury liability claims under TRA will take approximately 8 months longer to settle than bodily injury claims under Pre-OMPP. The average discount factor under TRA is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (6) $(1) \times (2) \times (1 - (3)) \times (5) / (4) + (1) \times (3)$

Technical Appendix
Calculation of Final Estimated Uninsured Motorist Loss Cost
Under TRA

Appendix 9
Exhibit 7
Page 2 of 3

(1) Uninsured motorist adjusted baseline cost	\$28.37
(2) Portion of uninsured motorist baseline loss cost attributed to bodily injury	\$24.72
(3) Uninsured motorist - bodily injury loss penetration level	28.4%
(4) Percentage of losses attributed to out-of-province accidents	2.0%
(5) Uninsured motorist discount factor under pre-OMPP product	0.727
(6) Uninsured motorist discount factor under TRA product	0.690
(7) Estimated uninsured motorist loss cost under TRA	\$10.67

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) Based on a review of insurance company rate filings, 90% of uninsured motorist losses are assumed to be related to bodily injury liability. The 90-10 split was applied prior to the application of ULAE, GST, and discount factors in deriving the uninsured motorist - bodily injury adjusted baseline loss cost.
- (3) This figure represents the estimated percentage of uninsured motorist losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (4) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (5) From Appendix 2, Exhibit 2.
- (6) Based on an analysis of the Osborne Inquiry database, it is estimated that, on average, uninsured motorist liability claims under TRA will take approximately 8 months longer to settle than uninsured motorist claims under Pre-OMPP. The average discount factor under TRA is, therefore, $.727 / (1.085^{.67})$, where 8.5% is the assumed discount rate, and .67 represents 8 months divided by 12 months. See Actuarial Report, Section 5, Subsection 2 for additional discussion.
- (7) $(2) \times (3) \times (1 - (4)) \times (6) / (5) + (2) \times (4) + (1) - (2)$

Technical Appendix
Calculation of Final Estimated Underinsured Motorist Loss Cost
Under TRA

Appendix 9
Exhibit 7
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(1) Underinsured motorist baseline cost	\$2.95
(2) Underinsured motorist loss penetration level	17.6%
(3) Percentage of losses attributed to out-of-province accidents	2.0%
(4) Estimated underinsured motorist loss cost under TRA	\$0.57

Notes:

- (1) From Actuarial Report, Section 5, Subsection 2.
- (2) This figure represents the estimated percentage of underinsured motorist losses that were paid under Pre-OMPP, that will continue to be paid under TRA. It is based on an analysis of the Osborne Inquiry bodily injury liability database, as discussed in the Actuarial Report, Section 5, Subsection 2. The figure also reflects the application of a 5% discount rate for determining prejudgment interest for non-economic losses.
- (3) Based on Osborne Inquiry findings (1.1%) and insurance company estimates contained in the initial OMPP rate filings submitted to the Ontario Insurance Commission (2% - 5%).
- (4) $(1) \times (2) \times (1 - (3)) + (1) \times (3)$

Derivation of Medical, Funeral, and Quebec Benefit Costs for Quebec-type Product

Medical Benefits

The Ontario-based estimate of the medical benefits loss cost for the Quebec-type product is derived in a manner identical to the method set forth in Actuarial Report, Section 5, Subsection

2. The only differences are:

- 1) The \$3,000/month indexed limit is adjusted to \$2,270/month indexed (equivalent to \$524/week).
- 2) The medical frequency rate is assumed to be .6991% to be consistent with the time period (policy year 1991) underlying the Quebec costs.
- 3) The adjusted baseline loss cost is \$19.52, and it does not reflect an adjustment for GST (since the Quebec costs also do not include a provision for GST).

The result is an estimated loss cost of \$57.86.

Funeral Benefits

The Ontario-based estimate of the funeral benefits loss cost for the Quebec-type product is derived in a manner identical to the method set forth in Actuarial Report, Section 5, Subsection

2. The only difference is that the assumed adjusted baseline loss cost is \$0.19. The resulting estimated loss cost is:

$$0.20 \times 3.144 = \$0.62 \text{ (rounding difference)}$$

Quebec Benefits

As the benefits for the Quebec-type product are essentially the same as those provided in Quebec, no cost is assumed for this benefit.

Technical Appendix
External Adjustments
Derivation of Death Benefits Adjustment Factor

Appendix 9
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Category of Compensable Death	Distribution*	Product Benefits	
		Pre-OMPP	Quebec
(1) Married heads of household 18 - 64	22.5%	\$11,200	\$90,506
(2) Married spouse 18 - 64	22.5%	10,000	53,229
(3) Married heads of household 65+ (no dep.)	5.0%	10,000	41,920
(4) Married spouse 65+ (no dep.)	5.0%	10,000	41,920
(5) 65+ not married (no dep.)	7.0%	0	0
(6) 18 - 64 not married with dependant	4.0%	11,600	96,481
(7) 18 - 64 not married without dependant	16.0%	0	15,720
(8) Dependant children	18.0%	2,000	15,720
Weighted Average		\$6,594	\$45,737
Ratio to Pre-OMPP			6.94

Benefit Assumptions **

Pre-OMPP	
(1)	\$10,000 to surviving spouse + \$1,000 x 1.2 dependants
(2)	\$10,000 to surviving spouse
(3)	\$10,000 to surviving spouse
(4)	\$10,000 to surviving spouse
(5)	\$0
(6)	\$10,000 to dependants + \$1,000 x 1.6 dependants
(7)	\$0
(8)	\$2,000 to parent/guardian

Quebec	
(1)	(\$24,161 x 2.49 (average indemnity factor***) x .94(% working) + \$41,920 x .06(% not working)) to surviving spouse + (\$26,200 x 1.2 dependants)
(2)	(\$24,161 x 2.49 (average indemnity factor***) x .62(% working) + \$41,920 x .38(% not working)) to surviving spouse
(3)	\$41,920 to surviving spouse
(4)	\$41,920 to surviving spouse
(5)	\$0
(6)	(\$24,161 x 2.49 (average indemnity factor***) x .67(% working) + \$41,920 x .33(% not working)) to surviving spouse + (\$26,200 x 1.6 dependants)
(7)	\$15,720 to parent/guardian
(8)	\$15,720 to parent/guardian

* See Appendix 8, Exhibit 2

** See Appendix 8, Exhibit 3 through 5 and Actuarial Report, Section 5

*** See Page 2

Technical Appendix
External Adjustments
Derivation of Average Indemnity Factor

Appendix 9
Exhibit 9
Page 2 of 2

Age	Deaths	Indemnity Factor *	D x IF
(1)	(2)	(3)	(4)
18-25	276	1.7	469.2
26	26	1.7	44.2
27	26	1.7	44.2
28	26	1.7	44.2
29	26	1.8	46.8
30	26	2.0	52.0
31	26	2.2	57.2
32	25	2.4	60.0
33	25	2.6	65.0
34	25	2.8	70.0
35	15	3.0	45.0
36	15	3.2	48.0
37	15	3.4	51.0
38	15	3.6	54.0
39	15	3.8	57.0
40	15	4.0	60.0
41	15	4.2	63.0
42	15	4.4	66.0
43	15	4.6	69.0
44	15	4.8	72.0
45	8	5.0	40.0
46	8	4.8	38.4
47	8	4.6	36.8
48	8	4.4	35.2
49	8	4.2	33.6
50	8	4.0	32.0
51	8	3.8	30.4
52	8	3.6	28.8
53	8	3.4	27.2
54	8	3.2	25.6
55	9	3.0	27.0
56	9	2.8	25.2
57	10	2.6	26.0
58	10	2.4	24.0
59	10	2.2	22.0
60	10	2.0	20.0
61	10	1.8	18.0
62	10	1.7	17.0
63	10	1.7	17.0
64	10	1.7	17.0
Total	835		2,079.0

Weighted Average Indemnity Factor 2.49

Notes:

* Minimum indemnity factor of 1.7 reflect minimum lump sum indemnity:

$$1.74 = \frac{\$41,920 - \text{Minimum lump sum indemnity}}{\$24,161 - \text{Average gross income}}$$

- (1) Group is limited to persons married (≥ 18) and working (≤ 64).
- (2) Source: 1988-89 Ontario Road Safety Annual Report, Table 2.2
- (3) Source: Automobile Insurance Act - Schedule 1
- (4) (2) x (3)

Estimated Weekly Income Benefit for Wage Earners - Quebec

Under the Quebec plan, the weekly benefit to a disabled wage earner is based on 90% of net weekly wages, subject to a maximum gross annual income of \$42,000. To calculate the average weekly benefit under Quebec, we use the same wage distribution table and net income calculation which was used to estimate TRA benefits. As under TRA, Quebec part-time workers receive benefits based on actual wages for the first six months of disability, after which they receive benefits based on imputed full-time income. The estimated weekly benefits are \$45.78 for part-time workers and \$384.91 for full-time workers (see Exhibit 10-A).

These weekly benefits represent the average benefits payable to wage earners before consideration of benefits available under the Quebec Pension Plan (QPP). Benefits under Quebec are primary to private income replacement plans. Therefore, weekly benefits without offsets are payable in the first four months of disability. After the first four months, QPP benefits, to which Quebec plan benefits are secondary, become payable to those who qualify. Column 8 of Exhibit 10-A displays the calculations of the part-time and full-time average weekly benefits including offsets for QPP income replacement benefits. Results are as follows:

	<u>Part-time</u>	<u>Full-time</u>
Average Weekly Benefit		
with QPP Offset	\$22.89	\$317.40

Estimated Present Value of the Average Total Income Benefit Cost for Wage Earners - Quebec

The estimated present value total income benefit cost for wage earners under the Quebec plan is calculated using the same disability duration table and basic method as was used for TRA. Benefits are indexed to the CPI. (See Appendix 6 for a full discussion of the method). Calculations are displayed in Exhibit 10-B, and the resulting estimated present value total income benefit cost, displayed on page 4 of the exhibit, is \$10,357.

Estimated Present Value of the Average Total Income Benefit Cost for Non-Wage Earners - Quebec

Non-wage earners eligible to receive income benefits in Quebec include all non-wage earner categories except retired persons, and recipients of two categories of dependant care benefits: non-wage earner dependant care benefits and wage earner dependant care benefits. All benefits are indexed to the CPI. We discuss each of the benefits in turn, starting with the student benefits.

Student Benefits

As under TRA, there are four categories of students for which the average total income cost must be calculated: 1) pre-school students; 2) elementary school students; 3) secondary school students; and 4) post-secondary school students. Calculations under Quebec are similar to those under TRA, with the following differences:

- Amounts for lost school terms differ. Under Quebec, students receive \$3,144 for each year of elementary school and \$5,764 for each year of secondary school that is lost due to the disability. Post-secondary school students receive \$5,764 per lost term, up to a maximum of \$11,528 per year.

- Under TRA, students who are under age 16 when they become disabled receive lost school benefits until age 16. At age 16, they begin to receive a weekly benefit of \$185 which increases bi-annually such that it becomes equal to the IRB at age 30, which is calculated as 90% of net average wages, subject to a minimum of \$185 and a maximum of \$1,000 per week. In Quebec, the student receives an IRB of \$506 per week upon reaching age 16, which is approximately 90% of net average provincial earnings.
- Post-secondary school students receive the lost school benefits to a presumed graduation date. After a 1 week waiting period, they also receive an IRB (currently \$506 per week) through age 65.

Estimated present value total income benefit costs for students under the Quebec plan are calculated in Exhibit 10-C, pages 1 through 4, and results are displayed on page 4.

Unemployed Benefits

The income benefit payable to individuals in the unemployed category in Quebec during the first six months of disability is equal to the greater of Unemployment Insurance benefits lost or an IRB based on 90% of net wages from employment the insured could have held (subject to a maximum gross annual income of \$42,000).

From Statistics Canada, "Unemployment Insurance Statistics" we determine that the 1989 average weekly unemployment payment in Ontario was \$226.09. Using an inflation rate of 4.5%, we trend the 1989 average payment to 1991 levels, resulting in an estimated 1991 average weekly payment of \$252. The Quebec weekly IRB of \$264, including QPP offsets, is calculated in Column (8) of Exhibit 10-A, page 1.

To calculate the average unemployed benefit of \$253 during the first six months of disability, we assume that 10% of unemployed people could have held employment, while the remaining 90% would continue to be unemployed.

After the first six months of disability, unemployed persons receive an IRB based on 90% of presumed net income (subject to a maximum gross annual income of \$42,000), as determined by the Société. The IRB, offset for QPP income replacement payments, is estimated to be \$264 (Column (8) of Exhibit 10-A, page 1).

The present value of the average income payment per unemployed person is calculated in the same manner in which the total income benefit costs for students are estimated. The average total income replacement cost of \$8,555 is displayed in Exhibit 10-C, page 8.

Primary Caregiver Benefits

After a 6 month waiting period, unemployed primary caregivers in Quebec have the option of choosing an IRB based on 90% of presumed full-time net income or the dependant care benefit for non-wage earners. Therefore, we estimate the applicable payments under each benefit, then adjust each to reflect the fact that some claimants will choose the other benefit. We begin with the estimate of the average IRB for primary caregivers:

As under TRA, there are two categories of unemployed primary caregivers:

- Temporarily unemployed (less than 3 years) and
- Long-term unemployed (more than 3 years).

We assume that the gross income of long-term and temporarily unemployed primary caregivers, if they were to hold employment, would be approximately 70% and 100% of the gross income

of wage earners in Quebec, respectively. By assuming that 50% of primary caregivers are temporary and 50% are long-term, and by reflecting QPP offsets received by temporary primary caregivers, we estimated that the gross income of all primary caregivers is 76% of the gross income of wage earners. The distribution of the estimated gross weekly income for primary caregivers in Quebec is shown in Column (5) of Exhibit 10-D, page 1. The resulting primary caregivers' IRB, offset for QPP income replacement benefits, is \$319.97 (Item (10) of Exhibit 10-D, page 1).

The dependant care benefit for non-wage earners consists of the following weekly benefits:

<u>Number of Dependants</u>	<u>Weekly Benefit</u>
1	\$262
2	\$293
3	\$325
4 or more	\$356

We estimate that the average child care benefit per disabled caregiver is \$294.35 (Exhibit 10-E, page 3).

Thus, unemployed primary caregivers in Quebec who would receive an IRB (Column (8) of Exhibit 10-D) under the caregiver benefit option that is less than \$294.35 would choose the dependant care benefit instead. Therefore, since those unemployed primary caregivers would receive a benefit of \$0 (because they would choose the dependant care benefit instead), the average applicable caregiver IRB decreases from \$319.97 to \$232.72 (Item (9) of Exhibit 10-D).

Since we assume that the dependant care benefit, if applicable, will be paid for an average of 9 years from the time of the disability, after 9 years all primary caregivers receive the IRB of \$319.97.

The present value of the total average income benefit for primary caregivers is calculated in the same manner in which the other total income benefit costs are estimated. The average total income benefit cost of \$5,989 is displayed in Exhibit 10-C, Page 8.

Dependant Care Benefits

As under TRA, there are two categories of dependant care benefits: those payable to disabled wage earners and those payable to disabled non-wage earners. For disabled wage earners, the child care benefit consists of reimbursement for incurred child care expenses up to the following per week maximums:

<u>Number of Dependants</u>	<u>Maximum Benefit per Week</u>
1	\$ 79
2	\$105
3	\$131
4 or more	\$157

In Exhibit 10-E, page 1 we estimate that the average child care benefit per disabled wage earner is \$25.00, payable until the last child is 16. We assume that the dependant care benefit, if applicable, on average will be paid for 9 years from the time of the disability. The present value of the average child care benefit per employed person is estimated in the same manner in which the other Quebec total income benefit costs are estimated. The average total income benefit cost of \$592 is displayed in Exhibit 10-C, page 8.

As discussed above under primary caregiver benefits, we estimate that the average child care benefit per disabled caregiver is \$294.35.

As discussed above, after 6 months the primary caregiver has the option of receiving the IRB instead. We estimate that 48.5% of all primary caregivers will choose the dependant care benefit of \$294.35, since their IRB under the primary caregiver benefit would be less than \$294.35. The remaining 51.5% will receive a benefit of \$0.

<u>Primary CareGivers</u>	<u>Child Care Benefit</u>	<u>Weights</u>
Choose Dep. Care	\$294.35	48.5%
Choose IRB	<u>\$0</u>	<u>51.5%</u>
	\$142.76	100.0%

Thus, the weighted average primary caregiver dependant care benefit after 6 months is \$142.76, payable until the last child is 16. We assume that the dependant care benefit, if applicable, on average will be paid for 9 years from the time of the disability. The present value of the average child care benefit per caregiver is calculated in the same manner in which the other Quebec total income benefit costs are estimated. The average total income benefit cost of \$4,982 is displayed in Exhibit 10-C, page 8.

"All Other" Benefits

Those disabled persons in the "All Other" category are considered to be long-term unemployed. In Quebec, after a 6 month waiting period, they would receive an IRB based on presumed full-time income as determined by the Société. As discussed above, we assume that the gross income of those persons in the "All Other" categories is approximately 70% of the gross income of wage earners in Quebec. We estimate that the IRB for "All Other" is \$301.44 (Item (9) of Exhibit 10-F). The present value of the average income benefit cost is calculated in the same

manner in which the other total income benefit costs are estimated. The average total income benefit cost of \$6,723 is displayed in Exhibit 10-C, page 8.

Total estimated present value income benefit costs by category are carried to Exhibit 10-G. There they are combined to produce an estimated income benefit loss cost by a procedure analogous to the one used to estimate such costs for OMPP and TRA. The resulting "Ontario based" estimate of loss costs for Quebec income replacement benefits is \$143.50.

Technical Appendix
Calculation of Quebec Weekly
Income Replacement Benefits - Wage Earners

Appendix 9
Exhibit 10-A
Page 1 of 2

1989 Estimated Annual Income	1989 Estimated Income Distribution	1/1/92 Estimated Annual Income	1/1/92 Estimated Capped Weekly Income	Net Capped Weekly Income	Estimated QPP Disability Pension	Quebec Weekly Income Replacement Benefits	
						Quebec Weekly Benefits	Quebec w/QPP Offsets
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,674	\$32.20	\$24.71	\$71.76	\$22.24	\$11.12
3,200	5.8%	3,572	68.70	52.72	77.23	47.45	23.73
5,200	5.1%	5,805	111.63	85.68	83.67	77.11	38.55
7,200	4.7%	8,038	154.57	118.63	90.12	106.77	61.71
9,200	4.0%	10,270	197.50	151.58	96.56	136.42	88.14
11,200	3.9%	12,503	240.44	184.53	103.00	166.08	114.58
14,000	6.1%	15,629	300.55	230.67	112.01	207.60	151.59
18,000	9.7%	20,094	386.42	296.57	124.89	266.91	204.47
23,000	11.3%	25,675	493.76	378.95	140.99	341.06	270.56
28,000	9.3%	31,257	601.10	463.51	150.68	417.16	341.82
36,000	14.9%	40,188	772.84	602.09	150.68	541.88	466.54
47,458	5.2%	52,979	808.00	627.53	150.68	564.78	489.44
53,850	3.9%	60,114	808.00	627.53	150.68	564.78	489.44
60,185	2.7%	67,186	808.00	627.53	150.68	564.78	489.44
66,127	2.1%	73,820	808.00	627.53	150.68	564.78	489.44
73,864	2.0%	82,456	808.00	627.53	150.68	564.78	489.44
85,357	0.8%	95,286	808.00	627.53	150.68	564.78	489.44
98,980	0.4%	110,494	808.00	627.53	150.68	564.78	489.44
115,743	0.2%	129,207	808.00	627.53	150.68	564.78	489.44
126,956	0.1%	141,724	808.00	627.53	150.68	564.78	489.44
157,174	0.2%	175,457	808.00	627.53	150.68	564.78	489.44
202,361	0.1%	225,900	808.00	627.53	150.68	564.78	489.44
244,240	0.1%	272,651	808.00	627.53	150.68	564.78	489.44
319,757	0.0%	356,953	808.00	627.53	150.68	564.78	489.44
515,529	0.1%	575,498	808.00	627.53	150.68	564.78	489.44
\$26,776		\$29,891	\$464.64	\$359.47	\$124.49	\$323.53	\$264.09

(9) Estimated Weekly Average Full Time Income Benefits	\$384.91	\$317.40
(10) Estimated Weekly Average Part Time Income Benefits	\$45.78	\$22.89

Notes:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with 2.5 years of trend applied @4.5% per year.
- (4) Column (3) divided by 52, subject to a maximum annual gross income of \$42,000.
- (5) From Column (20), page 2 of this exhibit.
- (6) Calculated as 75% of the QPP retirement pension plus \$66.93.
- (7) Calculated as 90% of Column (5).
- (8) Column (7) reduced for benefits payable under QPP disability plan.
- (9) Sum of Column (2) x Column (7) divided by the sum of Column (2) for range of annual income in Column (1) of \$1,500 to \$5,200.
- (10) Sum of Column (2) x Column (7) divided by the sum of Column (2) for range of annual income in Column (1) of \$7,200 to \$515,529.

Appendix 9
Exhibit 10-A
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Notes:

- William M. Mercer Limited**

Technical Appendix
Total Income Benefits Costs - Quebec
Wage Earners

Appendix 9
Exhibit 10-B
Page 1 of 4

	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full- Time Benefits	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590	1.00000				
	2	0.005	1,182,720	1.00000				
	3	0.008	1,135,411	1.00000				
	4	0.011	1,095,672	1.00000				
	5	0.014	1,062,802	1.00000				
	6	0.016	1,036,231	1.00000				
	7	0.019	1,015,507	1.00000				
	8	0.022	1,000,000	1.00000	\$6.54	\$54.99	\$46.22	\$46,218,210
	9	0.025	988,169	0.99978	6.54	54.99	46.22	45,661,129
	10	0.027	975,780	0.99955	6.54	54.99	46.22	45,078,584
	11	0.030	962,743	0.99933	6.54	54.99	46.22	44,466,368
	12	0.033	948,956	0.99910	6.54	54.99	46.22	43,819,790
	13	0.036	934,311	0.99888	6.54	54.99	46.22	43,133,889
	14	0.038	918,747	0.99866	6.54	54.99	46.22	42,405,874
	15	0.041	902,351	0.99844	6.54	54.99	46.22	41,639,789
	16	0.044	885,441	0.99821	6.54	54.99	46.22	40,850,331
	17	0.047	868,503	0.99799	6.54	54.99	46.22	40,059,932
	18	0.049	852,015	0.99777	6.54	54.99	46.22	39,290,636
	19	0.052	836,290	0.99754	6.54	54.99	46.22	38,556,859
	20	0.055	821,406	0.99732	6.54	54.99	46.22	37,862,174
	21	0.058	807,271	0.99710	6.54	54.99	46.22	37,202,315
	22	0.060	793,766	0.99687	6.54	54.99	46.22	36,571,775
	23	0.063	780,876	0.99665	6.54	54.99	46.22	35,969,844
	24	0.066	768,734	0.99643	6.54	54.99	46.22	35,402,628
	25	0.068	757,600	0.99621	6.54	54.99	46.22	34,882,074
	26	0.071	747,797	0.99598	6.54	54.99	46.22	34,423,022
	27	0.074	739,664	0.99576	6.54	54.99	46.22	34,041,029
	28	0.077	738,105	0.99554	6.54	54.99	46.22	33,961,689
Weeks	4.5	0.086	734,041	0.99476	45.78	384.91	323.53	236,237,999
	5.5	0.105	687,923	0.99320	45.78	384.91	323.53	221,049,631
	6.5	0.125	598,120	0.99165	45.78	384.91	323.53	191,892,859
	7.5	0.144	542,608	0.99010	45.78	384.91	323.53	173,810,980
	8.5	0.163	498,142	0.98855	45.78	384.91	323.53	159,317,947
	9.5	0.182	460,058	0.98701	45.78	384.91	323.53	146,907,732
	10.5	0.201	427,115	0.98547	45.78	384.91	323.53	136,175,010
	11.5	0.221	398,368	0.98392	45.78	384.91	323.53	126,811,185
	12.5	0.240	373,065	0.98239	45.78	384.91	323.53	118,570,909
	13.5	0.259	350,615	0.98085	45.78	384.91	323.53	111,261,436
	14.5	0.278	330,561	0.97932	45.78	384.91	323.53	104,733,666
	15.5	0.297	312,485	0.97779	45.78	384.91	323.53	98,851,757
	16.5	0.316	296,124	0.97626	45.78	384.91	323.53	93,529,659
	17.5	0.336	281,300	0.97473	22.89	317.40	264.09	72,412,387
	18.5	0.355	267,818	0.97321	22.89	317.40	264.09	68,834,066
	19.5	0.374	255,516	0.97169	22.89	317.40	264.09	65,569,562
	20.5	0.393	244,256	0.97017	22.89	317.40	264.09	62,582,074
	21.5	0.412	233,910	0.96865	22.89	317.40	264.09	59,837,580
	22.5	0.432	224,355	0.96714	22.89	317.40	264.09	57,303,548
	23.5	0.451	215,475	0.96562	22.89	317.40	264.09	54,949,428
	24.5	0.470	207,168	0.96411	22.89	317.40	264.09	52,748,424
	25.5	0.489	199,352	0.96261	22.89	317.40	264.09	50,678,988
	26.5	0.508	191,273	0.96110	22.89	317.40	264.09	48,549,139

Technical Appendix
Total Income Benefits Costs - Quebec
Wage Earners

Appendix 9
Exhibit 10-B
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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full- Time Benefits	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	27.5	0.527	183,135	0.95960	317.40	317.40	317.40	55,778,732
	28.5	0.547	175,448	0.95810	317.40	317.40	317.40	53,353,908
	29.5	0.566	168,188	0.95660	317.40	317.40	317.40	51,066,177
	30.5	0.585	161,327	0.95511	317.40	317.40	317.40	48,906,425
	31.5	0.604	154,843	0.95361	317.40	317.40	317.40	46,867,411
	32.5	0.623	152,476	0.95212	317.40	317.40	317.40	46,078,826
	33.5	0.642	149,304	0.95063	317.40	317.40	317.40	45,049,698
	34.5	0.662	145,362	0.94915	317.40	317.40	317.40	43,791,705
	35.5	0.681	140,655	0.94766	317.40	317.40	317.40	42,307,432
	36.5	0.700	135,587	0.94618	317.40	317.40	317.40	40,719,278
	37.5	0.719	130,581	0.94470	317.40	317.40	317.40	39,154,577
	38.5	0.738	126,032	0.94323	317.40	317.40	317.40	37,731,485
	39.5	0.758	121,873	0.94175	317.40	317.40	317.40	36,429,323
	40.5	0.777	118,160	0.94028	317.40	317.40	317.40	35,264,246
	41.5	0.796	114,742	0.93881	317.40	317.40	317.40	34,190,627
	42.5	0.815	113,435	0.93734	317.40	317.40	317.40	33,748,327
	43.5	0.834	108,266	0.93588	317.40	317.40	317.40	32,160,129
	44.5	0.853	105,238	0.93441	317.40	317.40	317.40	31,211,799
	45.5	0.873	102,345	0.93295	317.40	317.40	317.40	30,306,332
	46.5	0.892	99,577	0.93149	317.40	317.40	317.40	29,440,577
	47.5	0.911	96,928	0.93004	317.40	317.40	317.40	28,612,582
	48.5	0.930	94,391	0.92858	317.40	317.40	317.40	27,820,114
	49.5	0.949	91,958	0.92713	317.40	317.40	317.40	27,060,659
	50.5	0.968	89,626	0.92568	317.40	317.40	317.40	26,333,185
	51.5	0.988	87,387	0.92424	317.40	317.40	317.40	25,635,201
Months	12.5	1.042	82,662	0.96158	1,374	1,374	1,374	109,241,323
	13.5	1.125	76,527	0.95507	1,374	1,374	1,374	100,448,453
	14.5	1.208	72,286	0.94860	1,374	1,374	1,374	94,238,916
	15.5	1.292	66,747	0.94217	1,374	1,374	1,374	86,428,178
	16.5	1.375	62,806	0.93579	1,374	1,374	1,374	80,774,126
	17.5	1.458	59,346	0.92945	1,374	1,374	1,374	75,807,139
	18.5	1.542	56,888	0.92315	1,374	1,374	1,374	72,175,008
	19.5	1.625	54,715	0.91689	1,374	1,374	1,374	68,947,750
	20.5	1.708	52,776	0.91068	1,374	1,374	1,374	66,053,782
	21.5	1.792	51,051	0.90451	1,374	1,374	1,374	63,461,889
	22.5	1.875	49,503	0.89838	1,374	1,374	1,374	61,120,624
	23.5	1.958	48,125	0.89230	1,374	1,374	1,374	59,016,646
	24.5	2.042	31,830	0.92613	1,374	1,374	1,374	40,513,917
	25.5	2.125	31,049	0.91986	1,374	1,374	1,374	39,252,085
	26.5	2.208	30,346	0.91362	1,374	1,374	1,374	38,103,432
	27.5	2.292	29,711	0.90743	1,374	1,374	1,374	37,053,346
	28.5	2.375	29,143	0.90129	1,374	1,374	1,374	36,098,731
	29.5	2.458	28,632	0.89518	1,374	1,374	1,374	35,225,478
	30.5	2.542	28,180	0.88911	1,374	1,374	1,374	34,434,495
	31.5	2.625	27,800	0.88309	1,374	1,374	1,374	33,739,997
	32.5	2.708	27,467	0.87711	1,374	1,374	1,374	33,109,986
	33.5	2.792	27,179	0.87117	1,374	1,374	1,374	32,540,840
	34.5	2.875	26,931	0.86526	1,374	1,374	1,374	32,025,454
	35.5	2.958	26,686	0.85940	1,374	1,374	1,374	31,519,101
	36.5	3.042	26,442	0.85355	1,374	1,374	1,374	32,415,181
	37.5	3.125	26,147	0.84770	1,374	1,374	1,374	31,836,369

Technical Appendix
Total Income Benefits Costs - Quebec
Wage Earners

Appendix 9
Exhibit 10-B
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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full- Time Benefits	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Months	38.5	3.208	25,886	0.87994	1,374	1,374	1,374	31,305,031
	39.5	3.292	25,659	0.87398	1,374	1,374	1,374	30,820,270
	40.5	3.375	25,465	0.86806	1,374	1,374	1,374	30,380,010
	41.5	3.458	25,295	0.86218	1,374	1,374	1,374	29,972,740
	42.5	3.542	25,103	0.85634	1,374	1,374	1,374	29,543,701
	43.5	3.625	24,937	0.85053	1,374	1,374	1,374	29,149,493
	44.5	3.708	24,797	0.84477	1,374	1,374	1,374	28,789,456
	45.5	3.792	24,654	0.83905	1,374	1,374	1,374	28,429,501
	46.5	3.875	24,522	0.83336	1,374	1,374	1,374	28,085,700
	47.5	3.958	24,404	0.82772	1,374	1,374	1,374	27,761,179
	48.5	4.042	24,245	0.85910	1,374	1,374	1,374	28,626,146
	49.5	4.125	24,102	0.85328	1,374	1,374	1,374	28,264,500
	50.5	4.208	23,968	0.84750	1,374	1,374	1,374	27,916,922
	51.5	4.292	23,843	0.84176	1,374	1,374	1,374	27,583,169
	52.5	4.375	23,726	0.83606	1,374	1,374	1,374	27,261,849
	53.5	4.458	23,619	0.83039	1,374	1,374	1,374	26,955,030
	54.5	4.542	23,537	0.82477	1,374	1,374	1,374	26,679,454
	55.5	4.625	23,461	0.81918	1,374	1,374	1,374	26,413,130
	56.5	4.708	23,391	0.81363	1,374	1,374	1,374	26,155,900
	57.5	4.792	23,321	0.80812	1,374	1,374	1,374	25,900,942
	58.5	4.875	23,263	0.80264	1,374	1,374	1,374	25,661,476
	59.5	4.958	23,206	0.79720	1,374	1,374	1,374	25,425,162
Years	5.5	5.500	23,149	0.79707	16,505	16,505	16,505	304,534,363
	6.5	6.500	22,543	0.76768	16,505	16,505	16,505	285,629,022
	7.5	7.500	22,053	0.73938	16,505	16,505	16,505	269,119,304
	8.5	8.500	21,570	0.71212	16,505	16,505	16,505	253,520,960
	9.5	9.500	21,119	0.68587	16,505	16,505	16,505	239,069,200
	10.5	10.500	20,668	0.66058	16,505	16,505	16,505	225,338,440
	11.5	11.500	20,240	0.63623	16,505	16,505	16,505	212,536,680
	12.5	12.500	19,825	0.61277	16,505	16,505	16,505	200,504,042
	13.5	13.500	19,420	0.59018	16,505	16,505	16,505	189,167,147
	14.5	14.500	19,022	0.56842	16,505	16,505	16,505	178,459,313
	15.5	15.500	18,629	0.54747	16,505	16,505	16,505	168,329,074
	16.5	16.500	18,240	0.52729	16,505	16,505	16,505	158,738,027
	17.5	17.500	17,854	0.50785	16,505	16,505	16,505	149,650,519
	18.5	18.500	17,470	0.48912	16,505	16,505	16,505	141,033,458
	19.5	19.500	17,085	0.47109	16,505	16,505	16,505	132,840,586
	20.5	20.500	16,699	0.45372	16,505	16,505	16,505	125,052,627
	21.5	21.500	16,313	0.43700	16,505	16,505	16,505	117,658,347
	22.5	22.500	15,925	0.42089	16,505	16,505	16,505	110,625,411
	23.5	23.500	15,536	0.40537	16,505	16,505	16,505	103,944,430
	24.5	24.500	15,143	0.39043	16,505	16,505	16,505	97,579,926
	25.5	25.500	14,748	0.37603	16,505	16,505	16,505	91,531,008
	26.5	26.500	14,350	0.36217	16,505	16,505	16,505	85,777,536
	27.5	27.500	13,952	0.34882	16,505	16,505	16,505	80,323,882
	28.5	28.500	13,550	0.33596	11,471	11,471	11,471	52,217,126
	29.5	29.500	13,147	0.32357	7,647	7,647	7,647	32,530,866
	30.5	30.500	12,742	0.31164	3,824	3,824	3,824	15,183,193
	31.5	31.500	12,335	0.30015	0	0	0	0
	32.5	32.500	11,927	0.28909	0	0	0	0
	33.5	33.500	11,518	0.27843	0	0	0	0

Technical Appendix
Total Income Benefits Costs - Quebec
Wage Earners

Appendix 9
Exhibit 10-B
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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Part- Time Workers' Benefits	Full- Time Workers' Benefits	Weighted Part- and Full- Time Benefits	Present Value of Total Benefits
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	34.5	34.500	11,108	0.26817	0	0	0	0
	35.5	35.500	10,696	0.25828	0	0	0	0
	36.5	36.500	10,284	0.24876	0	0	0	0
	37.5	37.500	9,873	0.23959	0	0	0	0
	38.5	38.500	9,463	0.23075	0	0	0	0
	39.5	39.500	9,053	0.22225	0	0	0	0
	40.5	40.500	8,654	0.21405	0	0	0	0
	41.5	41.500	8,054	0.20616	0	0	0	0
	42.5	42.500	7,835	0.19856	0	0	0	0
	43.5	43.500	7,435	0.19124	0	0	0	0
	44.5	44.500	7,038	0.18419	0	0	0	0
	45.5	45.500	6,645	0.17740	0	0	0	0
	46.5	46.500	6,257	0.17086	0	0	0	0
	47.5	47.500	5,876	0.16456	0	0	0	0
	48.5	48.500	5,502	0.15849	0	0	0	0
	49.5	49.500	5,134	0.15265	0	0	0	0
	50.5	50.500	4,775	0.14702	0	0	0	0
	51.5	51.500	4,425	0.14160	0	0	0	0
	52.5	52.500	4,085	0.13638	0	0	0	0
	53.5	53.500	3,759	0.13136	0	0	0	0
	54.5	54.500	3,442	0.12651	0	0	0	0
	55.5	55.500	3,138	0.12185	0	0	0	0
	56.5	56.500	2,848	0.11736	0	0	0	0
	57.5	57.500	2,572	0.11303	0	0	0	0
	58.5	58.500	2,310	0.10886	0	0	0	0
	59.5	59.500	2,063	0.10485	0	0	0	0
	60.5	60.500	1,832	0.10098	0	0	0	0
	61.5	61.500	1,615	0.09726	0	0	0	0
	62.5	62.500	1,415	0.09368	0	0	0	0

(9) Present value of all benefits paid from time 1 week to 62.5 years \$10,356,690,158

(10) Number disabled at 1 week 1,000,000

(11) Present Value of average total income benefits	\$10,357
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Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, based on 1 million disabled at 1 week.
- (4) Present value of \$1 assuming a discount rate of 8.5%, and indexing annually at 4.5%.
- (5) Benefits amount for part-time workers.
- (6) Benefits amount for full-time workers.
- (7) Weighted average benefits for full- and part-time workers [Column (5) times 0.181 + Column (6) times 0.819].
- (8) Present value of payments for disabled wage earners during specified time period [Column (3) times Column (4) times Column (7)].
- (9) Sum of Column (8).
- (10) Column (3) at 1 week.
- (11) Line (9) divided by Line (10).

Technical Appendix
Total Income Benefits Costs - Quebec
Non-wage Earners

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Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Days	1	0.003	1,292,590				
	2	0.005	1,182,720				
	3	0.008	1,135,411				
	4	0.011	1,095,672				
	5	0.014	1,062,802				
	6	0.016	1,036,231				
	7	0.019	1,015,507				
	8	0.022	1,000,000	1.0000	\$0	\$0	\$0
	9	0.025	988,169	0.9998	0	0	0
	10	0.027	975,780	0.9996	0	0	0
	11	0.030	962,743	0.9993	0	0	0
	12	0.033	948,956	0.9991	0	0	0
	13	0.036	934,311	0.9989	0	0	0
	14	0.038	918,747	0.9987	0	0	0
	15	0.041	902,351	0.9984	0	0	0
	16	0.044	885,441	0.9982	0	0	0
	17	0.047	868,503	0.9980	0	0	0
	18	0.049	852,015	0.9978	0	0	0
	19	0.052	836,290	0.9975	0	0	0
	20	0.055	821,406	0.9973	0	0	0
	21	0.058	807,271	0.9971	0	0	0
	22	0.060	793,766	0.9969	0	0	0
	23	0.063	780,876	0.9967	0	0	0
	24	0.066	768,734	0.9964	0	0	0
	25	0.068	757,600	0.9962	0	0	0
	26	0.071	747,797	0.9960	0	0	0
	27	0.074	739,664	0.9958	0	0	0
	28	0.077	738,105	0.9955	0	0	0
Weeks	4.5	0.086	734,041	0.9948	0	0	0
	5.5	0.105	687,923	0.9932	0	0	0
	6.5	0.125	598,120	0.9917	0	0	0
	7.5	0.144	542,608	0.9901	0	0	0
	8.5	0.163	498,142	0.9886	0	0	0
	9.5	0.182	460,058	0.9870	0	0	0
	10.5	0.201	427,115	0.9855	0	0	0
	11.5	0.221	398,368	0.9839	0	0	0
	12.5	0.240	373,065	0.9824	0	0	5,764
	13.5	0.259	350,615	0.9809	0	0	0
	14.5	0.278	330,561	0.9793	0	0	0
	15.5	0.297	312,485	0.9778	0	0	0
	16.5	0.316	296,124	0.9763	0	0	0
	17.5	0.336	281,300	0.9747	0	0	0
	18.5	0.355	267,818	0.9732	0	0	0
	19.5	0.374	255,516	0.9717	0	0	0
	20.5	0.393	244,256	0.9702	0	0	0
	21.5	0.412	233,910	0.9687	0	0	0
	22.5	0.432	224,355	0.9671	0	0	0
	23.5	0.451	215,475	0.9656	0	0	0
	24.5	0.470	207,168	0.9641	0	0	0
	25.5	0.489	199,352	0.9626	0	0	0
	26.5	0.508	191,273	0.9611	0	3,144	5,764
	27.5	0.527	183,135	0.9596	0	0	0

Technical Appendix
Total Income Benefits Costs - Quebec
Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Weeks	28.5	0.547	175,448	0.9581	0	0	0	5,764
	29.5	0.566	168,188	0.9566	0	0	0	0
	30.5	0.585	161,327	0.9551	0	0	0	0
	31.5	0.604	154,843	0.9536	0	0	0	0
	32.5	0.623	152,476	0.9521	0	0	0	0
	33.5	0.642	149,304	0.9506	0	0	0	0
	34.5	0.662	145,362	0.9491	0	0	0	0
	35.5	0.681	140,655	0.9477	0	0	0	0
	36.5	0.700	135,587	0.9462	0	0	0	0
	37.5	0.719	130,581	0.9447	0	0	0	0
	38.5	0.738	126,032	0.9432	0	0	0	0
	39.5	0.758	121,873	0.9418	0	0	0	0
	40.5	0.777	118,160	0.9403	0	0	0	0
	41.5	0.796	114,742	0.9388	0	0	0	0
	42.5	0.815	113,435	0.9373	0	0	0	0
	43.5	0.834	108,266	0.9359	0	0	0	0
	44.5	0.853	105,238	0.9344	0	0	0	0
	45.5	0.873	102,345	0.9330	0	0	0	0
	46.5	0.892	99,577	0.9315	0	0	0	0
	47.5	0.911	96,928	0.9300	0	0	0	0
	48.5	0.930	94,391	0.9286	0	0	0	0
	49.5	0.949	91,958	0.9271	0	0	0	0
	50.5	0.968	89,626	0.9257	0	0	0	0
	51.5	0.988	87,387	0.9242	0	0	0	0
Months	12.5	1.042	82,662	0.9616	0	0	0	0
	13.5	1.125	76,527	0.9551	0	0	0	0
	14.5	1.208	72,286	0.9486	0	0	0	0
	15.5	1.292	66,747	0.9422	0	0	0	5,764
	16.5	1.375	62,806	0.9358	0	0	0	0
	17.5	1.458	59,346	0.9294	0	0	0	0
	18.5	1.542	56,888	0.9231	0	3,144	26,312	0
	19.5	1.625	54,715	0.9169	0	0	0	5,764
	20.5	1.708	52,776	0.9107	0	0	0	0
	21.5	1.792	51,051	0.9045	0	0	0	0
	22.5	1.875	49,503	0.8984	0	0	0	2,192
	23.5	1.958	48,125	0.8923	0	0	0	2,192
	24.5	2.042	31,830	0.9261	0	0	0	2,192
	25.5	2.125	31,049	0.9199	0	0	0	2,192
	26.5	2.208	30,346	0.9136	0	0	0	2,192
	27.5	2.292	29,711	0.9074	0	0	0	2,192
	28.5	2.375	29,143	0.9013	0	0	0	2,192
	29.5	2.458	28,632	0.8952	0	0	0	2,192
	30.5	2.542	28,180	0.8891	3,144	3,144	26,312	2,192
	31.5	2.625	27,800	0.8831	0	0	0	2,192
	32.5	2.708	27,467	0.8771	0	0	0	2,192
	33.5	2.792	27,179	0.8712	0	0	0	2,192
	34.5	2.875	26,931	0.8653	0	0	0	2,192
	35.5	2.958	26,686	0.8594	0	0	0	2,192
	36.5	3.042	26,442	0.8920	0	0	0	2,192
	37.5	3.125	26,147	0.8859	0	0	0	2,192
	38.5	3.208	25,886	0.8799	0	0	0	2,192
	39.5	3.292	25,659	0.8740	0	0	0	2,192

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Total Income Benefits Costs - Quebec
Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Months	40.5	3.375	25,465	0.8681	0	0	0	2,192
	41.5	3.458	25,295	0.8622	0	0	0	2,192
	42.5	3.542	25,103	0.8563	3,144	3,144	26,312	2,192
	43.5	3.625	24,937	0.8505	0	0	0	2,192
	44.5	3.708	24,797	0.8448	0	0	0	2,192
	45.5	3.792	24,654	0.8390	0	0	0	2,192
	46.5	3.875	24,522	0.8334	0	0	0	2,192
	47.5	3.958	24,404	0.8277	0	0	0	2,192
	48.5	4.042	24,245	0.8591	0	0	0	2,192
	49.5	4.125	24,102	0.8533	0	0	0	2,192
	50.5	4.208	23,968	0.8475	0	0	0	2,192
	51.5	4.292	23,843	0.8418	0	0	0	2,192
	52.5	4.375	23,726	0.8361	0	0	0	2,192
	53.5	4.458	23,619	0.8304	0	0	0	2,192
	54.5	4.542	23,537	0.8248	3,144	3,144	26,312	2,192
	55.5	4.625	23,461	0.8192	0	0	0	2,192
	56.5	4.708	23,391	0.8136	0	0	0	2,192
	57.5	4.792	23,321	0.8081	0	0	0	2,192
	58.5	4.875	23,263	0.8026	0	0	0	2,192
	59.5	4.958	23,206	0.7972	0	0	0	2,192
Years	5.5	5.500	23,149	0.7971	3,144	5,764	26,312	26,312
	6.5	6.500	22,543	0.7677	3,144	5,764	26,312	26,312
	7.5	7.500	22,053	0.7394	3,144	26,312	26,312	26,312
	8.5	8.500	21,570	0.7121	3,144	26,312	26,312	26,312
	9.5	9.500	21,119	0.6859	3,144	26,312	26,312	26,312
	10.5	10.500	20,668	0.6606	3,144	26,312	26,312	26,312
	11.5	11.500	20,240	0.6362	5,764	26,312	26,312	26,312
	12.5	12.500	19,825	0.6128	5,764	26,312	26,312	26,312
	13.5	13.500	19,420	0.5902	26,312	26,312	26,312	26,312
	14.5	14.500	19,022	0.5684	26,312	26,312	26,312	26,312
	15.5	15.500	18,629	0.5475	26,312	26,312	26,312	26,312
	16.5	16.500	18,240	0.5273	26,312	26,312	26,312	26,312
	17.5	17.500	17,854	0.5078	26,312	26,312	26,312	26,312
	18.5	18.500	17,470	0.4891	26,312	26,312	26,312	26,312
	19.5	19.500	17,085	0.4711	26,312	26,312	26,312	26,312
	20.5	20.500	16,699	0.4537	26,312	26,312	26,312	26,312
	21.5	21.500	16,313	0.4370	26,312	26,312	26,312	26,312
	22.5	22.500	15,925	0.4209	26,312	26,312	26,312	26,312
	23.5	23.500	15,536	0.4054	26,312	26,312	26,312	26,312
	24.5	24.500	15,143	0.3904	26,312	26,312	26,312	26,312
	25.5	25.500	14,748	0.3760	26,312	26,312	26,312	26,312
	26.5	26.500	14,350	0.3622	26,312	26,312	26,312	26,312
	27.5	27.500	13,952	0.3488	26,312	26,312	26,312	26,312
	28.5	28.500	13,550	0.3360	26,312	26,312	26,312	26,312
	29.5	29.500	13,147	0.3236	26,312	26,312	26,312	26,312
	30.5	30.500	12,742	0.3116	26,312	26,312	26,312	26,312
	31.5	31.500	12,335	0.3002	26,312	26,312	26,312	26,312
	32.5	32.500	11,927	0.2891	26,312	26,312	26,312	26,312
	33.5	33.500	11,518	0.2784	26,312	26,312	26,312	26,312
	34.5	34.500	11,108	0.2682	26,312	26,312	26,312	26,312
	35.5	35.500	10,696	0.2583	26,312	26,312	26,312	26,312
	36.5	36.500	10,284	0.2488	26,312	26,312	26,312	26,312

Technical Appendix
Total Income Benefits Costs - Quebec
Non-wage Earners

Appendix 9
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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Pre- School Benefits Amount	Elementary School Benefits Amount	Secondary School Benefits Amount	Post-Secondary School Benefits Amount
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Years	37.5	37.500	9,873	0.2396	26,312	26,312	26,312	26,312
	38.5	38.500	9,463	0.2308	26,312	26,312	26,312	26,312
	39.5	39.500	9,053	0.2222	26,312	26,312	26,312	26,312
	40.5	40.500	8,654	0.2141	26,312	26,312	26,312	26,312
	41.5	41.500	8,054	0.2062	26,312	26,312	26,312	26,312
	42.5	42.500	7,835	0.1986	26,312	26,312	26,312	26,312
	43.5	43.500	7,435	0.1912	26,312	26,312	26,312	26,312
	44.5	44.500	7,038	0.1842	26,312	26,312	26,312	26,312
	45.5	45.500	6,645	0.1774	26,312	26,312	26,312	19,734
	46.5	46.500	6,257	0.1709	26,312	26,312	26,312	13,156
	47.5	47.500	5,876	0.1646	26,312	26,312	26,312	6,578
	48.5	48.500	5,502	0.1585	26,312	26,312	26,312	0
	49.5	49.500	5,134	0.1527	26,312	26,312	26,312	0
	50.5	50.500	4,775	0.1470	26,312	26,312	19,734	0
	51.5	51.500	4,425	0.1416	26,312	26,312	13,156	0
	52.5	52.500	4,085	0.1364	26,312	26,312	6,578	0
	53.5	53.500	3,759	0.1314	26,312	26,312	0	0
	54.5	54.500	3,442	0.1265	26,312	26,312	0	0
	55.5	55.500	3,138	0.1218	26,312	26,312	0	0
	56.5	56.500	2,848	0.1174	26,312	19,734	0	0
	57.5	57.500	2,572	0.1130	26,312	13,156	0	0
	58.5	58.500	2,310	0.1089	26,312	6,578	0	0
	59.5	59.500	2,063	0.1048	26,312	0	0	0
	60.5	60.500	1,832	0.1010	26,312	0	0	0
	61.5	61.500	1,615	0.0973	26,312	0	0	0
	62.5	62.500	1,415	0.0937	19,734	0	0	0
	63.5	63.500	1,231	0.0902	13,156	0	0	0
	64.5	64.500	1,062	0.0869	6,578	0	0	0

(9) Present Value of average total income benefits	\$5,189	\$7,896	\$11,786	\$13,187
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Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, starting with 1 million at 1 week.
- (4) Present value of \$1 paid assuming indexing of 4.5% per year and discount rate of 8.5%.
- (5) Indexed benefits amount for children not yet in elementary school at time of accident.
- (6) Indexed benefits amount for children in elementary school at time of accident.
- (7) Indexed benefits amount for children in secondary school at time of accident.
- (8) Indexed benefits amount for students in post-secondary education at time of accident.
- (9) Calculated using sum of [Column (3) times Column (4) times relevant benefits amount] divided by 1,000,000.

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Total Income Benefits Costs - Quebec
Non-wage Earners

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Unemployed Benefits Amount	"All Other" Benefits Amount	Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)	(14)
Days	1	0.003	1,292,590						
	2	0.005	1,182,720						
	3	0.008	1,135,411						
	4	0.011	1,095,672						
	5	0.014	1,062,802						
	6	0.016	1,036,231						
	7	0.019	1,015,507						
	8	0.022	1,000,000	1.00000	\$36.14	\$0	\$0	\$3.57	\$42.05
	9	0.025	988,169	0.99978	36.14	0	0	3.57	42.05
	10	0.027	975,780	0.99955	36.14	0	0	3.57	42.05
	11	0.030	962,743	0.99933	36.14	0	0	3.57	42.05
	12	0.033	948,956	0.99910	36.14	0	0	3.57	42.05
	13	0.036	934,311	0.99888	36.14	0	0	3.57	42.05
	14	0.038	918,747	0.99866	36.14	0	0	3.57	42.05
	15	0.041	902,351	0.99844	36.14	0	0	3.57	42.05
	16	0.044	885,441	0.99821	36.14	0	0	3.57	42.05
	17	0.047	868,503	0.99799	36.14	0	0	3.57	42.05
	18	0.049	852,015	0.99777	36.14	0	0	3.57	42.05
	19	0.052	836,290	0.99754	36.14	0	0	3.57	42.05
	20	0.055	821,406	0.99732	36.14	0	0	3.57	42.05
	21	0.058	807,271	0.99710	36.14	0	0	3.57	42.05
	22	0.060	793,766	0.99687	36.14	0	0	3.57	42.05
	23	0.063	780,876	0.99665	36.14	0	0	3.57	42.05
	24	0.066	768,734	0.99643	36.14	0	0	3.57	42.05
	25	0.068	757,600	0.99621	36.14	0	0	3.57	42.05
	26	0.071	747,797	0.99598	36.14	0	0	3.57	42.05
	27	0.074	739,664	0.99576	36.14	0	0	3.57	42.05
	28	0.077	738,105	0.99554	36.14	0	0	3.57	42.05
Weeks	4.5	0.086	734,041	0.99476	253.00	0	0	25.00	294.35
	5.5	0.105	687,923	0.99320	253.00	0	0	25.00	294.35
	6.5	0.125	598,120	0.99165	253.00	0	0	25.00	294.35
	7.5	0.144	542,608	0.99010	253.00	0	0	25.00	294.35
	8.5	0.163	498,142	0.98855	253.00	0	0	25.00	294.35
	9.5	0.182	460,058	0.98701	253.00	0	0	25.00	294.35
	10.5	0.201	427,115	0.98547	253.00	0	0	25.00	294.35
	11.5	0.221	398,368	0.98392	253.00	0	0	25.00	294.35
	12.5	0.240	373,065	0.98239	253.00	0	0	25.00	294.35
	13.5	0.259	350,615	0.98085	253.00	0	0	25.00	294.35
	14.5	0.278	330,561	0.97932	253.00	0	0	25.00	294.35
	15.5	0.297	312,485	0.97779	253.00	0	0	25.00	294.35
	16.5	0.316	296,124	0.97626	253.00	0	0	25.00	294.35
	17.5	0.336	281,300	0.97473	253.00	0	0	25.00	294.35
	18.5	0.355	267,818	0.97321	253.00	0	0	25.00	294.35
	19.5	0.374	255,516	0.97169	253.00	0	0	25.00	294.35
	20.5	0.393	244,256	0.97017	253.00	0	0	25.00	294.35
	21.5	0.412	233,910	0.96865	253.00	0	0	25.00	294.35
	22.5	0.432	224,355	0.96714	253.00	0	0	25.00	294.35
	23.5	0.451	215,475	0.96562	253.00	0	0	25.00	294.35
	24.5	0.470	207,168	0.96411	253.00	0	0	25.00	294.35
	25.5	0.489	199,352	0.96261	253.00	0	0	25.00	294.35
	26.5	0.508	191,273	0.96110	264.00	301.44	232.72	25.00	142.76
	27.5	0.527	183,135	0.95960	264.00	301.44	232.72	25.00	142.76

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Unemployed Benefits Amount	"All Other" Benefits Amount	Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)	(14)
Weeks	28.5	0.547	175,448	0.95810	264.00	301.44	232.72	25.00	142.76
	29.5	0.566	168,188	0.95660	264.00	301.44	232.72	25.00	142.76
	30.5	0.585	161,327	0.95511	264.00	301.44	232.72	25.00	142.76
	31.5	0.604	154,843	0.95361	264.00	301.44	232.72	25.00	142.76
	32.5	0.623	152,476	0.95212	264.00	301.44	232.72	25.00	142.76
	33.5	0.642	149,304	0.95063	264.00	301.44	232.72	25.00	142.76
	34.5	0.662	145,362	0.94915	264.00	301.44	232.72	25.00	142.76
	35.5	0.681	140,655	0.94766	264.00	301.44	232.72	25.00	142.76
	36.5	0.700	135,587	0.94618	264.00	301.44	232.72	25.00	142.76
	37.5	0.719	130,581	0.94470	264.00	301.44	232.72	25.00	142.76
	38.5	0.738	126,032	0.94323	264.00	301.44	232.72	25.00	142.76
	39.5	0.758	121,873	0.94175	264.00	301.44	232.72	25.00	142.76
	40.5	0.777	118,160	0.94028	264.00	301.44	232.72	25.00	142.76
	41.5	0.796	114,742	0.93881	264.00	301.44	232.72	25.00	142.76
	42.5	0.815	113,435	0.93734	264.00	301.44	232.72	25.00	142.76
	43.5	0.834	108,266	0.93588	264.00	301.44	232.72	25.00	142.76
	44.5	0.853	105,238	0.93441	264.00	301.44	232.72	25.00	142.76
	45.5	0.873	102,345	0.93295	264.00	301.44	232.72	25.00	142.76
	46.5	0.892	99,577	0.93149	264.00	301.44	232.72	25.00	142.76
	47.5	0.911	96,928	0.93004	264.00	301.44	232.72	25.00	142.76
	48.5	0.930	94,391	0.92858	264.00	301.44	232.72	25.00	142.76
	49.5	0.949	91,958	0.92713	264.00	301.44	232.72	25.00	142.76
	50.5	0.968	89,626	0.92568	264.00	301.44	232.72	25.00	142.76
	51.5	0.988	87,387	0.92424	264.00	301.44	232.72	25.00	142.76
Months	12.5	1.042	82,662	0.96158	1,143	1,305	1,008	108	618
	13.5	1.125	76,527	0.95507	1,143	1,305	1,008	108	618
	14.5	1.208	72,286	0.94860	1,143	1,305	1,008	108	618
	15.5	1.292	66,747	0.94217	1,143	1,305	1,008	108	618
	16.5	1.375	62,806	0.93579	1,143	1,305	1,008	108	618
	17.5	1.458	59,346	0.92945	1,143	1,305	1,008	108	618
	18.5	1.542	56,888	0.92315	1,143	1,305	1,008	108	618
	19.5	1.625	54,715	0.91689	1,143	1,305	1,008	108	618
	20.5	1.708	52,776	0.91068	1,143	1,305	1,008	108	618
	21.5	1.792	51,051	0.90451	1,143	1,305	1,008	108	618
	22.5	1.875	49,503	0.89838	1,143	1,305	1,008	108	618
	23.5	1.958	48,125	0.89230	1,143	1,305	1,008	108	618
	24.5	2.042	31,830	0.92613	1,143	1,305	1,008	108	618
	25.5	2.125	31,049	0.91986	1,143	1,305	1,008	108	618
	26.5	2.208	30,346	0.91362	1,143	1,305	1,008	108	618
	27.5	2.292	29,711	0.90743	1,143	1,305	1,008	108	618
	28.5	2.375	29,143	0.90129	1,143	1,305	1,008	108	618
	29.5	2.458	28,632	0.89518	1,143	1,305	1,008	108	618
	30.5	2.542	28,180	0.88911	1,143	1,305	1,008	108	618
	31.5	2.625	27,800	0.88309	1,143	1,305	1,008	108	618
	32.5	2.708	27,467	0.87711	1,143	1,305	1,008	108	618
	33.5	2.792	27,179	0.87117	1,143	1,305	1,008	108	618
	34.5	2.875	26,931	0.86526	1,143	1,305	1,008	108	618
	35.5	2.958	26,686	0.85940	1,143	1,305	1,008	108	618
	36.5	3.042	26,442	0.85355	1,143	1,305	1,008	108	618
	37.5	3.125	26,147	0.84771	1,143	1,305	1,008	108	618
	38.5	3.208	25,886	0.84194	1,143	1,305	1,008	108	618
	39.5	3.292	25,659	0.83628	1,143	1,305	1,008	108	618

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	Length of Time Disabled	Length Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Unemployed Benefits Amount	"All Other" Benefits Amount	Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)	(14)
Months	40.5	3.375	25,465	0.86806	1,143	1,305	1,008	108	618
	41.5	3.458	25,295	0.86218	1,143	1,305	1,008	108	618
	42.5	3.542	25,103	0.85634	1,143	1,305	1,008	108	618
	43.5	3.625	24,937	0.85053	1,143	1,305	1,008	108	618
	44.5	3.708	24,797	0.84477	1,143	1,305	1,008	108	618
	45.5	3.792	24,654	0.83905	1,143	1,305	1,008	108	618
	46.5	3.875	24,522	0.83336	1,143	1,305	1,008	108	618
	47.5	3.958	24,404	0.82772	1,143	1,305	1,008	108	618
	48.5	4.042	24,245	0.85910	1,143	1,305	1,008	108	618
	49.5	4.125	24,102	0.85328	1,143	1,305	1,008	108	618
	50.5	4.208	23,968	0.84750	1,143	1,305	1,008	108	618
	51.5	4.292	23,843	0.84176	1,143	1,305	1,008	108	618
	52.5	4.375	23,726	0.83606	1,143	1,305	1,008	108	618
	53.5	4.458	23,619	0.83039	1,143	1,305	1,008	108	618
	54.5	4.542	23,537	0.82477	1,143	1,305	1,008	108	618
	55.5	4.625	23,461	0.81918	1,143	1,305	1,008	108	618
	56.5	4.708	23,391	0.81363	1,143	1,305	1,008	108	618
	57.5	4.792	23,321	0.80812	1,143	1,305	1,008	108	618
	58.5	4.875	23,263	0.80264	1,143	1,305	1,008	108	618
	59.5	4.958	23,206	0.79720	1,143	1,305	1,008	108	618
Years	5.5	5.500	23,149	0.79707	13,728	15,675	12,101	1,300	7,424
	6.5	6.500	22,543	0.76768	13,728	15,675	12,101	1,300	7,424
	7.5	7.500	22,053	0.73938	13,728	15,675	12,101	1,300	7,424
	8.5	8.500	21,570	0.71212	13,728	15,675	12,101	1,300	7,424
	9.5	9.500	21,119	0.68587	13,728	15,675	16,638	0	0
	10.5	10.500	20,668	0.66058	13,728	15,675	16,638	0	0
	11.5	11.500	20,240	0.63623	13,728	15,675	16,638	0	0
	12.5	12.500	19,825	0.61277	13,728	15,675	16,638	0	0
	13.5	13.500	19,420	0.59018	13,728	15,675	16,638	0	0
	14.5	14.500	19,022	0.56842	13,728	15,675	16,638	0	0
	15.5	15.500	18,629	0.54747	13,728	15,675	16,638	0	0
	16.5	16.500	18,240	0.52729	13,728	15,675	16,638	0	0
	17.5	17.500	17,854	0.50785	13,728	15,675	16,638	0	0
	18.5	18.500	17,470	0.48912	13,728	15,675	16,638	0	0
	19.5	19.500	17,085	0.47109	13,728	15,675	16,638	0	0
	20.5	20.500	16,699	0.45372	13,728	15,675	16,638	0	0
	21.5	21.500	16,313	0.43700	13,728	15,675	16,638	0	0
	22.5	22.500	15,925	0.42089	13,728	15,675	16,638	0	0
	23.5	23.500	15,536	0.40537	13,728	15,675	16,638	0	0
	24.5	24.500	15,143	0.39043	13,728	15,675	16,638	0	0
	25.5	25.500	14,748	0.37603	13,728	15,675	16,638	0	0
	26.5	26.500	14,350	0.36217	13,728	15,675	16,638	0	0
	27.5	27.500	13,952	0.34882	13,728	15,675	16,638	0	0
	28.5	28.500	13,550	0.33596	9,624	11,756	12,117	0	0
	29.5	29.500	13,147	0.32357	6,416	7,837	8,078	0	0
	30.5	30.500	12,742	0.31164	3,208	3,919	4,039	0	0
	31.5	31.500	12,335	0.30015	0	0	0	0	0
	32.5	32.500	11,927	0.28909	0	0	0	0	0
	33.5	33.500	11,518	0.27843	0	0	0	0	0
	34.5	34.500	11,108	0.26817	0	0	0	0	0
	35.5	35.500	10,696	0.25828	0	0	0	0	0
	36.5	36.500	10,284	0.24876	0	0	0	0	0

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	Length of Time Disabled	Length of Time Disabled In Years	Number Disabled	Present Value of \$1 Indexed	Unemployed Benefits Amount	"All Other" Benefits Amount	Primary Caregiver Benefits Amount	Employed Child Care Benefits Amount	Caregiver Child Care Benefits Amount
	(1)	(2)	(3)	(4)	(10)	(11)	(12)	(13)	(14)
Years	37.5	37.500	9,873	0.23959	0	0	0	0	0
	38.5	38.500	9,463	0.23075	0	0	0	0	0
	39.5	39.500	9,053	0.22225	0	0	0	0	0
	40.5	40.500	8,654	0.21405	0	0	0	0	0
	41.5	41.500	8,054	0.20616	0	0	0	0	0
	42.5	42.500	7,835	0.19856	0	0	0	0	0
	43.5	43.500	7,435	0.19124	0	0	0	0	0
	44.5	44.500	7,038	0.18419	0	0	0	0	0
	45.5	45.500	6,645	0.17740	0	0	0	0	0
	46.5	46.500	6,257	0.17086	0	0	0	0	0
	47.5	47.500	5,876	0.16456	0	0	0	0	0
	48.5	48.500	5,502	0.15849	0	0	0	0	0
	49.5	49.500	5,134	0.15265	0	0	0	0	0
	50.5	50.500	4,775	0.14702	0	0	0	0	0
	51.5	51.500	4,425	0.14160	0	0	0	0	0
	52.5	52.500	4,085	0.13638	0	0	0	0	0
	53.5	53.500	3,759	0.13136	0	0	0	0	0
	54.5	54.500	3,442	0.12651	0	0	0	0	0
	55.5	55.500	3,138	0.12185	0	0	0	0	0
	56.5	56.500	2,848	0.11736	0	0	0	0	0
	57.5	57.500	2,572	0.11303	0	0	0	0	0
	58.5	58.500	2,310	0.10886	0	0	0	0	0
	59.5	59.500	2,063	0.10485	0	0	0	0	0
	60.5	60.500	1,832	0.10098	0	0	0	0	0
	61.5	61.500	1,615	0.09726	0	0	0	0	0
	62.5	62.500	1,415	0.09368	0	0	0	0	0
(15) Present Value of average total income benefits					\$8,555	\$6,723	\$5,989	\$592	\$4,982

Notes:

- (1) Cumulative time disabled in days, weeks, months or years.
- (2) Column (1) converted into years.
- (3) Number of persons disabled, starting with 1 million at 1 week.
- (4) Present value of \$1 paid assuming indexing of 4.5% per year and discount rate of 8.5%.
- (10) Indexed benefits amount for persons unemployed (less than 3 years) at time of accident.
- (11) Indexed benefits amount for persons unemployed (more than 3 years) at time of accident.
- (12) Indexed benefits amount for unemployed caregivers at time of accident.
- (13) Indexed child care benefits amount for persons employed at time of accident.
- (14) Indexed child care benefits amount for caregivers at time of accident.
- (15) Calculated using sum of [Column (3) times Column (4) times relevant benefits amount] divided by 1,000,000.

Technical Appendix
Calculation of Quebec Weekly
Income Replacement Benefits - Caregivers

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1989 Estimated Annual Income	1989 Estimated Income Distribution	1/1/92 Estimated Annual Income	1/1/92 Estimated Weekly Income	Caregivers Estimated Weekly Income	Capped Caregivers Estimated Weekly Income	Caregivers Net Income	90% of Net Income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,674	\$32.20	\$24.47	\$24.47	\$18.78	\$16.90
3,200	5.8%	3,572	68.70	52.21	52.21	40.07	36.06
5,200	5.1%	5,805	111.63	84.84	84.84	65.11	58.60
7,200	4.7%	8,038	154.57	117.47	117.47	90.16	81.14
9,200	4.0%	10,270	197.50	150.10	150.10	115.20	103.68
11,200	3.9%	12,503	240.44	182.73	182.73	140.24	126.22
14,000	6.1%	15,629	300.55	228.42	228.42	175.31	157.78
18,000	9.7%	20,094	386.42	293.68	293.68	225.39	202.85
23,000	11.3%	25,675	493.76	375.26	375.26	288.00	259.20
28,000	9.3%	31,257	601.10	456.83	456.83	350.61	315.55
36,000	14.9%	40,188	772.84	587.36	587.36	452.67	407.40
47,458	5.2%	52,979	1,018.83	774.31	774.31	603.28	542.95
53,850	3.9%	60,114	1,156.03	878.58	808.00	627.53	564.78
60,185	2.7%	67,186	1,292.03	981.94	808.00	627.53	564.78
66,127	2.1%	73,820	1,419.61	1,078.90	808.00	627.53	564.78
73,864	2.0%	82,456	1,585.70	1,205.13	808.00	627.53	564.78
85,357	0.8%	95,286	1,832.43	1,392.64	808.00	627.53	564.78
98,980	0.4%	110,494	2,124.89	1,614.92	808.00	627.53	564.78
115,743	0.2%	129,207	2,484.75	1,888.41	808.00	627.53	564.78
126,956	0.1%	141,724	2,725.46	2,071.35	808.00	627.53	564.78
157,174	0.2%	175,457	3,374.18	2,564.37	808.00	627.53	564.78
202,361	0.1%	225,900	4,344.24	3,301.62	808.00	627.53	564.78
244,240	0.1%	272,651	5,243.29	3,984.90	808.00	627.53	564.78
319,757	0.0%	356,953	6,864.48	5,217.00	808.00	627.53	564.78
515,529	0.1%	575,498	11,067.28	8,411.13	808.00	627.53	564.78
\$26,776		\$29,891	\$574.83	\$436.87	\$386.29	\$298.17	\$268.35

(9) Estimated Weekly Caregiver Benefits from 6 mos. to 9 yrs

\$232.72

(10) Estimated Weekly Caregiver Benefits (after 9 yrs)

\$319.97

Notes:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with 2.5 years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) Column (4) x 0.76.
- (6) Minimum of Column (5) and \$808.
- (7) Column (20), Page 2 of this exhibit.
- (8) Column (7) x 0.90.
- (9) Sum of Column (2) x Column (8) for range of annual income in Column (1) of \$28,000 to \$515,529 divided by the sum of Column (2) for annual income range of \$7,200 to \$515,529.
- (10) Sum of Column (2) x Column (8) divided by the sum of Column (2) for range of annual income in Column (1) of \$7,200 to \$515,529.

[illegible]

Notes:

- (11) Column (6) page 1 of this exhibit.
- (12) Column (11) x 0.70.
- (13) 17% of the first \$543.75 of Column (12) plus 26% of taxable income between \$543.75 and \$1,087.50, plus 29% of taxable income above \$1,087.50.
- (14) 53% of Column (13).
- (15) 10% of the portion of Column (14) in excess of \$192.31.
- (16) 5% of Column (13), plus 3% of the portion of Column (13) in excess of \$288.46.
- (17) 2.25% of the first \$640 of Column (11).
- (18) 2.2% of the first \$501.92 of Column (11).
- (19) Sum of Columns (13) through (18).
- (20) Column (11) - Column (19).

Technical Appendix
Average Child Care Benefits
Per Disabled Wage Earner - Quebec

Appendix 9
Exhibit 10-E
Page 1 of 4

<u>Wage Earner Marital Status</u>	<u>Number of Families</u> (1)	<u>Number of Wage Earners Per Family</u> (2)	<u>Total Number of Wage Earners</u> (3)	<u>Child Care Benefits per Disabled Wage Earner</u> (4)
Married - 2 wage earners				
a. w/ kids	829,848	2	1,659,697	
b. w/out kids	694,046	2	<u>1,388,093</u>	
Subtotal			3,047,789	\$32.48
Married-1 wage earner				
a. w/ kids	428,309	1	428,309	
b. w/out kids	81,653	1	<u>81,653</u>	
Subtotal			509,961	\$0.00
Single-1 wage earner w/ kids	194,806	1	194,806	\$95.01
Single-1 wage earner w/out kids			<u>948,444</u>	<u>\$0.00</u>

(5) Average Child Care Benefits per Disabled Wage Earner

\$25.00

Notes:

- (1) From Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario, Number 1 and 1986 Ontario Census.
- (3) Column (1) x Column (2).
- (4) From Page 2, lines (5) and (9) of this exhibit.
- (5) Weighted benefits amount by total number of wage earners.

Technical Appendix
Average Child Care Benefits
Per Disabled Wage Earner - Quebec

Appendix 9
Exhibit 10-E
Page 2 of 4

Derivation of Average Benefits per Disabled Wage Earner by Category

<u>Number of 2 Parent Families With</u>		<u>Maximum</u> <u>Benefits</u> <u>Amount</u>	<u>Incurred</u> <u>Benefits</u> <u>Amount</u>	<u>Total</u> <u>Payments</u>
(1)		(2)	(3)	(4)
0 kids	816,525	\$0.00	\$0.00	\$0
1 kid	464,950	79.00	39.50	18,365,525
2 kids	577,360	105.00	52.50	30,311,400
3 kids (Avg of 3.5)	<u>296,155</u>	<u>144.00</u>	<u>72.00</u>	<u>21,323,160</u>
Totals	2,154,990			\$70,000,085
(5) Average Benefits Per 2 Parent Family				\$32.48

<u>Number of</u> <u>Single Parent Families With Kids</u>		<u>Benefits</u> <u>Amount</u>	<u>Total</u> <u>Payments</u>	
(6)		(7)	(8)	
1 kid	165,845	\$79.00	\$13,101,755	
2 kids	88,810	105.00	9,325,050	
3 kids + (Avg of 3.5)	<u>36,100</u>	<u>144.00</u>	<u>5,198,400</u>	
Totals	290,755		\$27,625,205	
(9) Average Benefits Per Single Parent				\$95.01

Notes:

- (1) & (6) From 1986 Ontario Census.
- (2) & (7) From Quebec Compensation Table, "For Accidents Occurring Between January 1 and December 31, 1991."
- (3) Column (2) x 0.5.
- (4) Column (1) x Column (3).
- (5) Column (4) total / Column (1) total.
- (8) Column (6) x Column (7).
- (9) Column (8) total / Column (6) total.

Technical Appendix
Average Child Care Benefits
Per Disabled Caregiver - Quebec

Appendix 9
Exhibit 10-E
Page 3 of 4

<u>Caregiver Marital Status</u>	<u>Number of Families</u> (1)	<u>Number of Caregivers Per Family</u> (2)	<u>Total Number of Caregivers</u> (3)	<u>Child Care Benefits per Disabled Caregiver</u> (4)
Married-1 Caregiver	428,309	1	428,309	\$296.17
Married-2 Caregivers	80,308	2	160,616	296.17
Single-1 Caregiver	95,949	1	95,949	283.14

(5) Average Child Care Benefits per Disabled Caregiver

\$294.35

Notes:

- (1) From Ontario Women's Directorate, Infoflash: A Fact Sheet on Women in Ontario, Number 1 and 1986 Ontario Census.
- (3) Column (1) x Column (2).
- (4) From Page 4, lines (4) and (8) of this exhibit.
- (5) Weighted benefits amount by total number of wage earners.

Technical Appendix
Average Child Care Benefits
Per Disabled Caregiver

Appendix 9
Exhibit 10-E
Page 4 of 4

Derivation of Average Benefits per Disabled Caregiver by Category

<u>Number of 2 Parent Families With</u>		<u>Benefits</u>	<u>Total</u>
(1)		<u>Amount</u>	<u>Payments</u>
		(2)	(3)
1 kid	464,950	\$262.00	\$121,816,900
2 kids	577,360	293.00	169,166,480
3 kids (Avg of 3.5)	<u>296,155</u>	<u>356.00</u>	<u>105,431,180</u>
Totals	1,338,465		\$396,414,560

(4) Average Benefits Per 2 Parent Family w/ kids \$296.17

<u>Number of Single Parent Families With Kids</u>		<u>Benefits</u>	<u>Total</u>
(5)		<u>Amount</u>	<u>Payments</u>
		(6)	(7)
1 kid	165,845	\$262.00	\$43,451,390
2 kids	88,810	293.00	26,021,330
3 kids + (Avg of 3.5)	<u>36,100</u>	<u>356.00</u>	<u>12,851,600</u>
Totals	290,755		\$82,324,320

(8) Average Benefits Per Single Parent \$283.14

Notes:

- (1) & (5) From 1986 Ontario Census.
- (2) & (6) From Quebec Compensation Table, "For Accidents Occurring Between January 1 and December 31, 1991."
- (3) Column (1) x Column (2).
- (4) Column (3) total / Column (1) total.
- (7) Column (5) x Column (6).
- (8) Column (7) total / Column (5) total.

Technical Appendix
Calculation of Quebec Weekly
Income Replacement Benefits - "All Other"

Appendix 9
Exhibit 10-F
Page 1 of 2

1989 Estimated Annual Income	1989 Estimated Income Distribution	1/1/92 Estimated Annual Income	1/1/92 Estimated Weekly Income	"All Other" Estimated Weekly Income	Capped "All Other" Estimated Weekly Income	"All Other" Net Income	90% of Net Income
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
\$1,500	7.2%	\$1,674	\$32.20	\$22.54	\$22.54	\$17.30	\$15.57
3,200	5.8%	3,572	68.70	48.09	48.09	36.91	33.22
5,200	5.1%	5,805	111.63	78.14	78.14	59.97	53.98
7,200	4.7%	8,038	154.57	108.20	108.20	83.04	74.74
9,200	4.0%	10,270	197.50	138.25	138.25	106.11	95.50
11,200	3.9%	12,503	240.44	168.31	168.31	129.17	116.26
14,000	6.1%	15,629	300.55	210.38	210.38	161.47	145.32
18,000	9.7%	20,094	386.42	270.49	270.49	207.60	186.84
23,000	11.3%	25,675	493.76	345.63	345.63	265.27	238.74
28,000	9.3%	31,257	601.10	420.77	420.77	322.93	290.64
36,000	14.9%	40,188	772.84	540.99	540.99	416.06	374.45
47,458	5.2%	52,979	1,018.83	713.18	713.18	553.64	498.28
53,850	3.9%	60,114	1,156.03	809.22	808.00	627.53	564.78
60,185	2.7%	67,186	1,292.03	904.42	808.00	627.53	564.78
66,127	2.1%	73,820	1,419.61	993.73	808.00	627.53	564.78
73,864	2.0%	82,456	1,585.70	1,109.99	808.00	627.53	564.78
85,357	0.8%	95,286	1,832.43	1,282.70	808.00	627.53	564.78
98,980	0.4%	110,494	2,124.89	1,487.42	808.00	627.53	564.78
115,743	0.2%	129,207	2,484.75	1,739.33	808.00	627.53	564.78
126,956	0.1%	141,724	2,725.46	1,907.82	808.00	627.53	564.78
157,174	0.2%	175,457	3,374.18	2,361.92	808.00	627.53	564.78
202,361	0.1%	225,900	4,344.24	3,040.97	808.00	627.53	564.78
244,240	0.1%	272,651	5,243.29	3,670.30	808.00	627.53	564.78
319,757	0.0%	356,953	6,864.48	4,805.13	808.00	627.53	564.78
515,529	0.1%	575,498	11,067.28	7,747.09	808.00	627.53	564.78
\$26,776		\$29,891	\$574.83	\$402.38	\$363.98	\$280.75	\$252.68

(9) Estimated Weekly Income Benefits (after 6 months)

\$301.44

Notes:

- (1) Estimated average incomes within each range are selected to produce the 1989 total average of \$26,776 from Statistics Canada.
- (2) Compiled from Statistics Canada, 1989 and Revenue Canada Taxation.
- (3) Column (1) with 2.5 years of trend applied @4.5% per year.
- (4) Column (3) divided by 52.
- (5) Column (4) x 0.70.
- (6) Minimum of Column (5) and \$808.
- (7) Column (19), Page 2 of this exhibit.
- (8) Column (7) x 0.90.
- (9) Sum of Column (2) x Column (8) divided by the sum of Column (2) for range from \$7,200 to \$515,529.

Appendix 9
Exhibit 10-F
Page 2 of 2

Notes:

- William M. Mercer Limited**

Technical Appendix
Relative Income Benefits Loss Costs

Appendix 9
Exhibit 10-G
Page 1 of 1

Income Benefits Category	Population Distribution	Accident Frequency Relative to Employed	Accident Frequency Relative to Pre-OMPP	Present Value of Total Income Benefits Costs	
				Pre-OMPP	Quebec
(1)	(2)	(3)	(4)	(5)	(6)
Employed	51.6%	1.00	1.139	\$2,512	\$10,357
Unemployed	4.0%	1.00	1.000	1,256	8,555
Pre-School	6.9%	0.25	1.000	0	5,189
Elementary School	12.2%	0.45	1.000	0	7,896
Secondary School	5.9%	1.00	1.000	0	11,786
Post-Secondary School	3.3%	1.70	1.000	0	13,187
Caregivers	7.5%	1.00	1.000	559	5,989
All Other	1.0%	1.00	1.000	559	6,723
Retired	10.7%	0.40	1.000	0	0
Child Care-Caregivers	7.5%	1.00	1.000	0	4,982
Child Care-Employed	51.6%	1.00	1.000	0	592
(A) Totals				\$1,394	\$9,580
(B) Pre-OMPP Baseline Income Benefits Loss Costs				\$21.26	\$20.88
(C) Relative Income Benefits Loss Costs				<u>\$21.26</u>	<u>\$143.50</u>

Notes:

- (2) Estimated from 1986 Ontario Census data and from "Statistics Canada," November 1990.
- (3) From Appendix 6, Exhibit 2, line (11).
- (4) Employed factor accounts for: 1) additional utilization due to significantly higher benefits available under the Quebec plan (10%); and 2) additional claimants that were fully compensated by a private income benefits plan and therefore received no benefits under Pre-OMPP, which is secondary to such plans.
- (5) From Appendix 6, Exhibit 4, Page 4, lines (11) and (12).
- (6) From Exhibit 10-B, Page 4, line (9), Exhibit 10-C, Page 4, line (9) and Exhibit 10-C, Page 8, line (15).
- (A) $5(A) = \text{The sum of } (2) \times (3) \times (5).$
 $6(A) = \text{The sum of } (2) \times (3) \times (4) \times (6).$
- (B) Adjusted baseline loss costs from Exhibit 2.
- (C) $5(C) = 5(B).$
 $6(C) = [6(A) / 5(A)] \times 6(B).$

APPENDIX 10

**Technical Appendix
Derivation of Expense Constant**

**Appendix 10
Exhibit 1
Page 1 of 2**

(1)	1990 underwriting expense ratio	5.3%
(2)	Adjustment for private passenger vehicles	0.2%
(3)	Selected underwriting expense ratio for private passenger vehicles	5.5%
(4)	1990 Ontario direct written premium for private passenger vehicles excluding farmers	\$3,797,383,471
(5)	Estimated 1990 underwriting expenses	\$208,856,091
(6)	Estimated provision in 1990 underwriting expenses for OIC costs	\$5,100,000
(7)	Estimated 1990 private passenger (excluding farmers) earned exposures	4,685,248
(8)	Estimated 1990 underwriting expenses excluding OIC assessment per earned exposure	\$43.5
(9)	Trend factor at 4.5% per year	1.116
(10)	Estimated adjustment factor to reflect GST	1.012
(11)	Estimated 1992 underwriting expenses excluding OIC assessment per earned exposure	\$49.1
(12)	Assumed 1992 OIC assessment per earned exposure	\$2.3
(13)	Estimated 1992 expense constant	\$51.4

Notes on following page.

Notes From Page 1

- (1) From IBC 1990 Direct Expense Report - Ontario automobile
- (2) Based on a special call to Ontario insurers in 1988 - Reference: Mercer report to OAIB, "Insurance Rate Proposal For Ontario Private Passenger Automobile," dated December 5, 1988, page 89
- (3) (1) + (2)
- (4) Source: IBC 1990 AIX Loss Ratio Report
- (5) (3) x (4)
- (6) From Exhibit 2
- (7) Source: IBC 1990 AIX Loss Ratio Report
- (8) $((5) - (6)) / (7)$
- (9) Annual trend rate of 4.5% selected to be consistent with inflation rate assumption. The factor reflects the compounding of the annual trend rate from the experience period mid-point of July 1, 1990 to January 1, 1993, which is the midpoint of the policy year beginning July 1, 1992.
- (10) Assumes estimated general price increase attributed to GST of 1.2% will apply to these costs. Refer to discussion of GST in Subsection 1, Section 5 of Actuarial Report.
- (11) (8) x (9) x (10)
- (12) From Exhibit 2
- (13) (11) + (12)

- (1) The OAIB never assessed companies for its expenses, hence we conclude that there are no OAIB costs included in the 1990 Direct Expense report figures.
- (2) The OIC was established on May 28, 1990, hence we assume the 1990 Direct Expense Report figures reflect 7 months of OIC costs.
- (3) The OIC fiscal year runs from April 1 through March 31.
- (4) The OIC issued a bulletin in February 1991 advising companies of the preliminary OIC assesment for the pro rata portion of the OIC's 1990 fiscal year through December 31, 1990. That estimated assessment was $0.00035 \times$ automobile direct written premium for all property and casualty companies; $0.00085 \times$ property and casualty gross written premium for Ontario incorporated property and casualty companies; and $0.00055 \times$ property and casualty gross written premium for federally incorporated property and casualty companies. All references to premium refer to 1990 premium.
- (5) In May, 1991 the OIC released the final assessment figures for its full 1990 fiscal year as $.00048209 \times$ automobile direct written premium for all property and casualty companies; $.0008483 \times$ property and casualty gross written premium for federally incorporated property and casualty companies; and $.0012483 \times$ property and casualty gross written premium for Ontario incorporated property and casualty companies. All references to premium refer to 1990 premium.
- (6) The OIC issued a bulletin in May 1991 with its preliminary cost estimates for the 1991 fiscal year - a total property and casualty company assessment of \$12.7 million, broken down as \$3 million assessed to all property and casualty companies at a rate of $0.00064263 \times$ automobile direct written premium; and \$9.7 million assessed to property

and casualty companies at rates of $0.00166316 \times$ property and casualty net written premium for Ontario incorporated companies, and $0.00126316 \times$ property and casualty net written premium for federally incorporated property and casualty companies. All references to premium refer to 1990 premium.

- (7) The total direct written premium for the property and casualty industry was \$7.7 billion in 1990 per the Superintendent's report, of which \$1.011 billion (13%) was attributed to Ontario incorporated companies.
- (8) Based on (1), (2), and (3) we assume that the expense figures reported in the IBC Direct Expense Report reflect the pro rata preliminary cost estimates released by the OIC, and that the expenses included would be about 70% of what they otherwise would have been for the full 10 month period from May 1990 to March 1991.
- (9) Based on (5) and (6) the portion of the preliminary 1991 assessment that is applicable to all companies is about 30% higher than the corresponding portion of the final 1990 assessment; the portion of the preliminary 1991 assessment applicable to Ontario incorporated companies is about 30% higher than the corresponding portion of the final 1990 assessment; and the portion of the preliminary 1991 assessment applicable to federally incorporated companies is about 50% higher than the corresponding portion of the final 1990 assessment.
- (10) The 1990 pro rata assessment, assumed to be reflected in the IBC Direct Expense Report, is estimated to be \$6.2 million. This is derived by dividing \$3.0 million by 1.3, plus \$9.7 million times .13 divided by 1.3, plus \$9.7 million times .87 divided by 1.5, or \$8.9 million; 70% of \$8.9 million is \$6.2 million.

- (11) Based on the 1989 AIX Loss Ratio Report, approximately 83% of the 1989 automobile direct written premium is attributed to private passenger automobiles excluding farmers. Therefore we assume that 83% of the \$6.2 million, or \$5.1 million, is attributed to private passenger automobiles excluding farmers. We also assume that 83% of the \$12.7 million assessment, or \$10.5 million is attributed to private passenger automobiles excluding farmers.
- (12) Dividing the \$10.5 million by the 1990 earned exposures for private passenger automobiles excluding farmers, or 4,872,658 earned exposures, results in \$2.15 per earned exposure.
- (13) Assuming an annual trend rate of 4.5%, we arrive at an estimated OIC assessment for 1993 of \$2.3 per earned exposure.

After-Tax Return on Equity - Various Industrial Sectors
as Reported in the July 1988, 1989, 1990 & 1991 Report on Business Top 1000

DataFile

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Category	Averages	ROE - SINGLE YEARS			ROE - SIMPLE AVERAGES					
		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	8 yr 1990	
BY SINGLE SECTORS										
BANKS-CANADA	Unweighted	-1.13%	10.09%	9.35%	12.22%	10.12%	9.79%	8.07%	8.18%	10.28%
	Weighted	-6.92%	16.62%	8.91%	14.99%	9.49%	10.00%	9.19%	9.38%	11.00%
TRUSTS	Unweighted	16.83%	15.65%	14.15%	1.12%	16.47%	13.54%	13.79%	12.05%	14.16%
	Weighted	20.01%	17.59%	16.67%	4.81%	17.78%	16.39%	16.61%	14.48%	16.00%
BROKERS, INTEGRATED & MUTUAL MANAGEMENT	Unweighted	19.03%	5.60%	8.07%	-12.93%	19.08%	14.21%	12.67%	13.81%	12.02%
	Weighted	11.72%	10.55%	12.43%	8.70%	14.60%	12.64%	12.19%	11.43%	13.09%
OTHER FINANCIAL SERVICES	Unweighted	5.15%	5.52%	5.08%	7.89%	4.68%	4.93%	7.14%	7.95%	5.24%
	Weighted	6.32%	6.79%	5.54%	5.84%	7.74%	8.66%	10.40%	9.73%	7.11%
INSURANCE, LIFE & P&C	Unweighted	10.22%	10.57%	11.83%	9.27%	9.17%	6.46%	9.57%	9.86%	9.69%
	Weighted	10.16%	10.59%	12.20%	10.38%	9.43%	9.84%	10.11%	10.26%	10.04%
MANAGEMENT COMPANIES	Unweighted	5.25%	8.59%	9.63%	3.85%	4.27%	4.64%	7.48%	7.77%	5.43%
	Weighted	11.32%	11.82%	11.14%	7.87%	9.59%	9.76%	9.91%	10.31%	9.85%
UTILITIES; GAS, TELEPHONE & ELECTRIC	Unweighted	13.81%	13.39%	13.73%	11.32%	15.02%	14.67%	13.90%	13.14%	14.19%
	Weighted	13.60%	13.37%	13.30%	12.30%	13.96%	13.92%	13.47%	13.18%	13.60%

BY COMBINED SECTORS		ROE - SINGLE YEARS			ROE - SIMPLE AVERAGES				
		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	5 yr 1990
Category	Averages								
BANKS AND TRUSTS	Unweighted	3.37%	11.46%	10.60%	9.56%	11.71%	10.71%	9.55%	9.11%
	Weighted	-0.17%	16.86%	10.92%	12.55%	11.57%	11.57%	11.11%	10.61%
ALL FINANCIAL SERVICES EXCLUDING INSURANCE	Unweighted	6.36%	10.09%	9.82%	5.87%	12.42%	11.00%	9.96%	9.80%
	Weighted	2.55%	15.19%	10.87%	11.56%	11.78%	11.60%	11.26%	10.69%
ALL FINANCIAL SERVICES INCLUDING INSURANCE	Unweighted	6.80%	10.15%	10.07%	6.27%	12.05%	10.43%	9.91%	9.80%
	Weighted	3.42%	14.61%	11.03%	11.42%	11.51%	11.38%	11.12%	10.64%
ALL FINANCIAL SERVICES PLUS MANAGEMENT COS.	Unweighted	6.03%	9.37%	9.85%	5.07%	8.18%	7.52%	8.71%	8.80%
	Weighted	7.35%	13.21%	11.08%	9.67%	10.56%	10.56%	10.52%	10.47%
ALL SURVEYED SECTORS	Unweighted	7.35%	10.05%	10.53%	6.08%	9.34%	8.74%	9.63%	9.50%
	Weighted	8.40%	13.23%	11.47%	10.09%	11.13%	11.14%	11.04%	10.91%

After-Tax Return on Equity - Various Industrial Sectors - NET DataFile
as Reported in the July 1988, 1989, 1990 & 1991 Report on Business Top 1000

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Category	Averages	ROE - SINGLE YEARS			ROE - SIMPLE AVERAGES					
		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	8 yr 1990	
Canada Inflation		4.40%	4.00%	5.00%	4.80%	4.52%	4.18%	4.30%	4.48%	4.55%
BY SINGLE SECTORS - Adjusted for Canada Inflation										
BANKS-CANADA	Unweighted	-5.53%	6.09%	4.35%	7.42%	5.60%	5.61%	3.77%	3.70%	5.73%
	Weighted	-11.32%	12.62%	3.91%	10.19%	4.97%	5.82%	4.89%	4.90%	6.45%
TRUSTS	Unweighted	12.43%	11.65%	9.15%	-3.68%	11.95%	9.36%	9.49%	7.57%	9.61%
	Weighted	15.61%	13.59%	11.67%	0.01%	13.26%	12.21%	12.31%	10.00%	11.45%
BROKERS, INTEGRATED & MUTUAL MANAGEMENT	Unweighted	14.63%	1.60%	3.07%	-17.73%	14.56%	10.03%	8.37%	9.33%	7.47%
	Weighted	7.32%	6.55%	7.43%	3.90%	10.08%	8.46%	7.89%	6.95%	8.54%
OTHER FINANCIAL SERVICES	Unweighted	0.75%	1.52%	0.08%	3.09%	0.16%	0.75%	2.84%	3.47%	0.69%
	Weighted	1.92%	2.79%	0.54%	1.04%	3.22%	4.48%	6.10%	5.25%	2.56%
INSURANCE, LIFE & P&C	Unweighted	5.82%	6.57%	6.83%	4.47%	4.65%	2.28%	5.27%	5.38%	5.14%
	Weighted	5.76%	6.59%	7.20%	5.58%	4.91%	5.66%	5.81%	5.78%	5.49%
MANAGEMENT COMPANIES	Unweighted	0.85%	4.59%	4.63%	-0.95%	-0.25%	0.46%	3.18%	3.29%	0.88%
	Weighted	6.92%	7.82%	6.14%	3.07%	5.07%	5.58%	5.61%	5.83%	5.30%
UTILITIES; GAS, TELEPHONE & ELECTRIC	Unweighted	9.41%	9.39%	8.73%	6.52%	10.50%	10.49%	9.60%	8.66%	9.64%
	Weighted	9.20%	9.37%	8.30%	7.50%	9.44%	9.74%	9.17%	8.70%	9.05%

Category		ROE - SINGLE YEARS			ROE - SIMPLE AVERAGES					
Averages		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	8 yr 1990	
BY COMBINED SECTORS - Adjusted for Canada Inflation										
BANKS AND TRUSTS	Unweighted	-1.03%	7.46%	5.60%	4.76%	7.19%	6.53%	5.25%	4.63%	6.66%
	Weighted	-4.57%	12.86%	5.92%	7.75%	7.05%	7.39%	6.81%	6.13%	7.65%
ALL FINANCIAL SERVICES EXCLUDING INSURANCE	Unweighted	1.96%	6.09%	4.82%	1.07%	7.90%	6.82%	5.66%	5.32%	6.46%
	Weighted	-1.85%	11.19%	5.87%	6.76%	7.26%	7.42%	6.96%	6.21%	7.51%
ALL FINANCIAL SERVICES INCLUDING INSURANCE	Unweighted	2.40%	6.15%	5.07%	1.47%	7.53%	6.25%	5.61%	5.32%	6.31%
	Weighted	-0.98%	10.61%	6.03%	6.62%	6.99%	7.20%	6.82%	6.16%	7.27%
ALL FINANCIAL SERVICES PLUS MANAGEMENT COS.	Unweighted	1.63%	5.37%	4.85%	0.27%	3.66%	3.34%	4.41%	4.32%	3.62%
	Weighted	2.95%	9.21%	6.08%	4.87%	6.04%	6.38%	6.22%	5.99%	6.29%
ALL SURVEYED SECTORS	Unweighted	2.95%	6.05%	5.53%	1.28%	4.82%	4.56%	5.33%	5.02%	4.60%
	Weighted	4.00%	9.23%	6.47%	5.29%	6.61%	6.96%	6.74%	6.43%	6.74%

After-Tax Return on Equity - Various Industrial Sectors - NET DataFile
as Reported in the July 1988, 1989, 1990 & 1991 Report on Business Top 1000

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Category	Averages	ROE - SINGLE YEARS				ROE - SIMPLE AVERAGES				
		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	8 yr 1990	
Ontario Inflation										
		5.10%	4.70%	5.80%	4.80%	4.94%	4.64%	4.82%	4.96%	5.00%
BY SINGLE SECTORS - Adjusted for ONTARIO Inflation										
BANKS-CANADA	Unweighted	-6.23%	5.39%	3.55%	7.42%	5.18%	5.15%	3.25%	3.22%	5.28%
	Weighted	-12.02%	11.92%	3.11%	10.19%	4.55%	5.36%	4.37%	4.42%	6.00%
TRUSTS OF	Unweighted	11.73%	10.95%	8.35%	-3.68%	11.53%	8.90%	8.97%	7.09%	9.16%
	Weighted	14.91%	12.89%	10.87%	0.01%	12.84%	11.75%	11.79%	9.52%	11.00%
BROKERS, INTEGRATED & MUTUAL MANAGEMENT	Unweighted	13.93%	0.90%	2.27%	-17.73%	14.14%	9.57%	7.85%	8.85%	7.02%
	Weighted	6.62%	5.85%	6.63%	3.90%	9.66%	8.00%	7.37%	6.47%	8.09%
OTHER FINANCIAL SERVICES	Unweighted	0.05%	0.82%	-0.72%	3.09%	-0.26%	0.29%	2.32%	2.99%	0.24%
	Weighted	1.22%	2.09%	-0.26%	1.04%	2.80%	4.02%	5.58%	4.77%	2.11%
INSURANCE, LIFE & P&C	Unweighted	5.12%	5.87%	6.03%	4.47%	4.23%	1.82%	4.75%	4.90%	4.69%
	Weighted	5.06%	5.89%	6.40%	5.58%	4.49%	5.20%	5.29%	5.30%	5.04%
MANAGEMENT COMPANIES	Unweighted	0.15%	3.89%	3.83%	-0.95%	-0.67%	0.00%	2.66%	2.81%	0.43%
	Weighted	6.22%	7.12%	5.34%	3.07%	4.65%	5.12%	5.09%	5.35%	4.85%
UTILITIES; GAS, TELEPHONE & ELECTRIC	Unweighted	8.71%	8.69%	7.93%	6.52%	10.08%	10.03%	9.08%	8.18%	9.19%
	Weighted	8.50%	8.67%	7.50%	7.50%	9.02%	9.28%	8.65%	8.22%	8.60%

Category	Averages	ROE - SINGLE YEARS			ROE - SIMPLE AVERAGES					
		1987	1988	1989	1990	5 yr 1987	5 yr 1988	5 yr 1989	5 yr 1990	8 yr 1990
BY COMBINED SECTORS - Adjusted for ONTARIO Inflation										
BANKS AND TRUSTS	Unweighted	-1.73%	6.76%	4.80%	4.76%	6.77%	6.07%	4.73%	4.15%	6.21%
	Weighted	-5.27%	12.16%	5.12%	7.75%	6.63%	6.93%	6.29%	5.65%	7.20%
ALL FINANCIAL SERVICES EXCLUDING INSURANCE	Unweighted	1.26%	5.39%	4.02%	1.07%	7.48%	6.36%	5.14%	4.84%	6.01%
	Weighted	-2.55%	10.49%	5.07%	6.76%	6.84%	6.96%	6.44%	5.73%	7.06%
ALL FINANCIAL SERVICES INCLUDING INSURANCE	Unweighted	1.70%	5.45%	4.27%	1.47%	7.11%	5.79%	5.09%	4.84%	5.86%
	Weighted	-1.68%	9.91%	5.23%	6.62%	6.57%	6.74%	6.30%	5.68%	6.82%
ALL FINANCIAL SERVICES PLUS MANAGEMENT COS.	Unweighted	0.93%	4.67%	4.05%	0.27%	3.24%	2.88%	3.89%	3.84%	3.17%
	Weighted	2.25%	8.51%	5.28%	4.87%	5.62%	5.92%	5.70%	5.51%	5.84%
ALL SURVEYED SECTORS	Unweighted	2.25%	5.35%	4.73%	1.28%	4.40%	4.10%	4.81%	4.54%	4.15%
	Weighted	3.30%	8.53%	5.67%	5.29%	6.19%	6.50%	6.22%	5.95%	6.29%

Assumptions

(1)	Base Federal income tax rate	38.00%
(2)	Provincial offset	10.00%
(3)	Preliminary Federal income tax rate (1) - (2)	28.00%
(4)	Federal surcharge (3% of 28%)	0.84%
(5)	Gross Federal income tax rate (3) + (4)	28.84%
(6)	Provincial tax	15.50%
(7)	Total income taxes (5) + (6)	44.34%
(8)	Selected rate	45.00%

1990 (NPW/CANADA:EQUITY) Ratios Top 25 Companies (or groups)		F-11 ED62 DBL/123	
Unadjusted	NPW:EQUITY	Adjusted	Companies or Groups with and NPW:EQUITY Ratio exceeding statutory limit of 3.00, or those of less than 1.5 have been dropped.
1 Metropolis Insurance	3.224	4 Canadian Surety	2.575
2 Personal Insurance Co.	3.087	5 Prudential of America (Canada)	2.569
3 Guardian of Canada Group	3.047	6 Allstate Insurance (Canada)	2.568
4 Canadian Surety	2.575	7 Halifax Group	2.334
5 Prudential of America (Canada)	2.569	8 Co-Operators Group	2.331
6 Allstate Insurance (Canada)	2.568	9 Economical Mutual Group	2.297
7 Halifax Group	2.334	10 Independent Ins. Mgmt. Group	2.233
8 Co-Operators Group	2.331	11 Commercial Union Canada	2.216
9 Economical Mutual Group	2.297	12 Gore Mutual Group	2.163
10 Independent Ins. Mgmt. Group	2.233	13 Royal (Canada)	2.108
11 Commercial Union Canada	2.216	14 Dominion of Canada Group	2.086
12 Gore Mutual Group	2.163	15 Citadel	2.056
13 Royal (Canada)	2.108	16 General Accident (Canada)	1.809
14 Dominion of Canada Group	2.086	17 Zurich Group	1.706
15 Citadel	2.056	18 Central Capital Group	1.539
16 General Accident (Canada)	1.809	15 Average (Unweighted)	2.173
17 Zurich Group	1.706		
18 Central Capital Group	1.539		
19 Wawanesa Mutual Group	1.483		
20 State Farm Mutual	1.311		
21 Axa Home Insurance	1.285		
22 Optimum/Lowest Group	1.283		
23 Liberty Mutual	1.129		
24 Guarantee Co. of N. America	0.958		
25 Continental (Canada) Group	0.909		
25 Average (Unweighted)	2.012	Group Weighted Average	1.780

1990 (NPW CANADA: EQUITY) Ratios
Middle 24 Companies (or groups)

Unadjusted		NPW: EQUITY		Adjusted	Companies or Groups with and NPW: EQUITY Ratio exceeding statutory limit of 3.00, or those of less than 1.5 have been dropped.
1	Unifund Assurance	2.742	1	Unifund Assurance	2.742
2	Sum Alliance	2.687	2	Sum Alliance	2.687
3	Canada Life Casualty	2.605	3	Canada Life Casualty	2.605
4	Victoria Insurance	2.526	4	Victoria Insurance	2.526
5	Toronto General Insurance	2.427	5	Toronto General Insurance	2.427
6	Kingsway General Insurance	2.397	6	Kingsway General Insurance	2.397
7	Prudential Assurance (England)	2.300	7	Prudential Assurance (England)	2.300
8	York Fire & Casualty	2.282	8	York Fire & Casualty	2.282
9	Lloyd's	2.184	9	Lloyd's	2.184
10	CAA Insurance (Ontario)	2.139	10	CAA Insurance (Ontario)	2.139
11	GAN Canada	2.078	11	GAN Canada	2.078
12	Constitution (Canada)	2.012	12	Constitution (Canada)	2.012
13	Jevco	1.915	13	Jevco	1.915
14	Laurentian Casualty	1.750	14	Laurentian Casualty	1.750
15	Simcoe & Erie	1.528	15	Simcoe & Erie	1.528
16	Motors Insurance	1.431			
17	Cigna	1.409			
18	Palco	1.327			
19	Maplex	1.248			
20	Progressive Casualty	0.890			
21	United States Fire	0.747			
22	Market Insurance	0.564			
23	Hartford Fire	0.529			
24	Lambert Mutual	0.246			
24	Average (Unweighted)	1.748	15	Average (Unweighted)	2.238
				Group Weighted Average	1.593

1990 (NPW CANADA: EQUITY) Ratios
Bottom 27 Companies (or groups)

1990 (NPW CANADA: EQUITY) Ratios		Bottom 27 Companies (or groups)	
Unadjusted	NPW: EQUITY	Adjusted	NPW: EQUITY
1	Chateau	1	Chateau
2	Loyalist Insurance	2	Loyalist Insurance
3	Cumis General	3	Cumis General
4	Portage La Prairie Mutual	4	Portage La Prairie Mutual
5	Herald	5	Herald
6	American Home	6	American Home
7	Chubb	7	Chubb
8	Coackman	8	Coackman
9	Hanover	9	Hanover
10	Prudisco	10	Prudisco
11	Federated (Canada)	11	Federated (Canada)
12	New Hampshire	12	New Hampshire
13	Old Republic	13	Federated (Canada)
14	Continental Casualty	14	New Hampshire
15	Ecological	15	Average (Unweighted)
16	American Road	16	
17	St. Paul Fire & Marine	17	
18	Hartford (Canada)	18	
19	Federal	19	
20	Chrysler	20	
21	Choppers	21	
22	Actia	22	
23	Commerce & Industry (Canada)	23	
24	Transamerica	24	
25	Sumitomo	25	
26	Sentry	26	
27	Employers Insurance of Wausau	27	
	Average (Unweighted)		
	0.915		0.877

1989 (NPW CANADA: EQUITY) Ratios
Top 25 Companies (or groups)

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Unadjusted		NPW: EQUITY	Adjusted		Companies or Groups with and NPW: EQUITY Ratio exceeding statutory limit of 3.00, or those of less than 1.5 have been dropped.
1	Canadian Surety	3.198	3	Independent Ins. Mgmt. Group	2.941
2	Guardian of Canada Group	3.111	4	Citadel	2.841
3	Independent Ins. Mgmt. Group	2.941	5	Prudential of America (Canada)	2.806
4	Citadel	2.841	6	Personal	2.691
5	Prudential of America (Canada)	2.806	7	Gore Mutual Group	2.609
6	Personal	2.691	8	Halifax Group	2.579
7	Gore Mutual Group	2.609	9	Allstate Insurance (Canada)	2.538
8	Halifax Group	2.579	10	Economical Mutual Group	2.495
9	Allstate Insurance (Canada)	2.538	11	Co-Operators Group	2.252
10	Economical Mutual Group	2.495	12	Commercial Union Canada	2.165
11	Co-Operators Group	2.252	13	Zurich Group	2.092
12	Commercial Union Canada	2.165	14	State Farm Mutual	1.969
13	Zurich Group	2.092	15	Dominion of Canada Group	1.888
14	State Farm Mutual	1.969	16	Royal (Canada)	1.886
15	Dominion of Canada Group	1.888	17	Liberty Mutual	1.871
16	Royal (Canada)	1.886	18	General Accident (Canada)	1.847
17	Liberty Mutual	1.871	19	Central Capital Group	1.688
18	General Accident (Canada)	1.847			
19	Central Capital Group	1.688			
20	Wawanesa Mutual Group	1.349			
21	Axa Home Insurance	1.324			
22	Simcoe & Erie General	1.320			
23	Optimum/Lowest Group	1.226			
24	Guarantee Co. of N. America	1.049			
25	Continental (Canada) Group	0.884			
	Average (Unweighted)	2.105	17	Average (Unweighted)	2.303
				Group Weighted Average	1.862

1989 (NPW CANADA: EQUITY) Ratios
Middle 23 Companies (or groups)

Unadjusted		NPW: EQUITY		Adjusted		Companies or Groups with and NPW: EQUITY Ratio exceeding statutory limit of 3.00, or those of less than 1.5 have been dropped.
1	York Fire & Casualty	3.863		2	Unifund Assurance	2.635
2	Unifund Assurance	2.635		3	Metropolitan	2.539
3	Metropolitan	2.539		4	Prudential Assurance (England)	2.387
4	Prudential Assurance (England)	2.387		5	Constitution (Canada)	2.187
5	Constitution (Canada)	2.187		6	Federated	2.117
6	Federated	2.117		7	Pafco	2.061
7	Pafco	2.061		8	Sun Alliance	2.042
8	Sun Alliance	2.042		9	CAA Insurance (Ontario)	2.020
9	CAA Insurance (Ontario)	2.020		10	Motors Insurance	1.967
10	Motors Insurance	1.967		11	Kingway General Insurance	1.920
11	Kingway General Insurance	1.920		12	Progressive Casualty	1.905
12	Progressive Casualty	1.905		13	Toronto General Insurance	1.843
13	Toronto General Insurance	1.843		14	Jevco	1.817
14	Jevco	1.817		15	Laurensian Casualty	1.793
15	Laurensian Casualty	1.793		16	Cigna	1.788
16	Cigna	1.788		17	Victoria Insurance	1.542
17	Victoria Insurance	1.542				
18	Lloyd's	1.482				
19	Maplex	1.335				
20	United States Fire	1.019				
21	Markel	0.954				
22	Hartford Fire	0.506				
23	Lumbermans Mutual	0.250				
23	Average (Unweighted)	1.825		16	Average (Unweighted)	2.035
					Group Weighted Average	1.496

1989 (NPW CANADA: EQUITY) Ratios
Bottom 28 Companies (or groups)

Unadjusted	NPW: EQUITY	Adjusted	Companies or Groups with and NPW: EQUITY Ratio exceeding statutory limit of 3.00, or those of less than 1.0 have been dropped.
1 Canada Life Casualty	5.735		
2 Herald	2.631	2	Herald
3 Loyalist Insurance	2.366	3	Loyalist Insurance
4 GAN Canada	1.973	4	GAN Canada
5 Hanover Insurance	1.951	5	Hanover Insurance
6 Chubb	1.777	6	Chubb
7 Portage La Prairie Mutual	1.761	7	Portage La Prairie Mutual
8 Caisse General	1.715	8	Caisse General
9 Cochin	1.705	9	Cochin
10 Chateau	1.261	10	Chateau
11 Prudenco	1.137	11	Prudenco
12 American Home	1.101	12	American Home
13 New Hampshire	0.985	13	New Hampshire
14 Commerce & Industry (Canada)	0.860		
15 Continental Casualty	0.784		
16 Ecological	0.566		
17 St. Paul Fire & Marine	0.506		
18 American Road	0.478		
19 Old Republic	0.470		
20 Chrysler	0.436		
21 Hartford (Canada)	0.365		
22 Acton	0.285		
23 Sunbeam	0.152		
24 Transamerica	0.099		
25 Federal	0.070		
26 Seafly	0.052		
27 Choquet	0.039		
28 Employers Insurance of Wausau	0.021		
28 Average (Unweighted)	1.114	12	Average (Unweighted)
			Group Weighted Average
			0.900

Technical Appendix
 Premiums Receivable & Amounts Due From Agents
 As a Percentage of Direct Written Premiums

Appendix 10
 Exhibit 6
 Page 1 of 1

<u>Company</u>	1989			1990		
	Direct	Premiums	Ratio	Direct	Premiums	Ratio
	Premiums	Receivable +		Premiums	Receivable +	
	<u>Written</u>	<u>Agents' Balances</u>	<u>(2) / (1)</u>	<u>Written</u>	<u>Agents' Balances</u>	<u>(5) / (4)</u>
	(1)	(2)	(3)	(4)	(5)	(6)
Allstate	\$397,959	\$46,694	11.73 %	\$419,518	\$58,423	13.93 %
Co-operators	745,567	22,031	2.95 %	755,910	14,908	1.97 %
Dominion of Canada	355,294	29,732	8.37 %	377,433	32,199	8.53 %
General Accident	440,969	66,798	15.15 %	478,067	67,003	14.02 %
Guardian	376,444	43,244	11.49 %	411,859	42,121	10.23 %
Pilot Insurance	\$294,786	N/A	N/A	\$337,429	\$50,844	15.07 %
Royal Insurance	734,876	71,179	9.69 %	773,127	66,947	8.66 %
State Farm Mutual Auto	335,936	13,514	4.02 %	383,220	21,359	5.57 %
Wellington	267,879	49,706	18.56 %	304,762	50,404	16.54 %
<u>Zurich of Canada</u>	<u>475,367</u>	<u>66,823</u>	<u>14.06 %</u>	<u>570,097</u>	<u>85,871</u>	<u>15.06 %</u>
Weighted Average	\$4,130,291	\$409,721	9.92 %	\$4,811,422	\$490,079	10.19 %

The model we used to derive the profit margins for each of the three products solves for profit on an iterative basis.

The equation that is solved is $P = R - I$

Where,

P = Required Pre-Tax Profit Margin

R = Target End of Year Pre-Tax Return on Surplus

I = Pre-Tax Investment Income Realized on Surplus and Premium

And,

I does not include any investment income earned on profit or on the discounted loss reserves, but does reflect the assumed timing of revenue income and outflow described in the profit section of the report.

We note that the solution to the equation must also provide for premium to be the assumed multiple of surplus. It is in meeting this criteria that iteration is necessary.

APPENDIX

William M. Mercer Limited

ENDIX 11

Income Benefits

Income Replacement Benefits (IRB)

Pre-OMPP 80% of gross income, \$140 per week maximum, not indexed.

OMPP 80% of gross income, \$600 per week maximum, \$185 per week minimum, not indexed.

TRA 90% of net income (net of federal and provincial income taxes, CPP contributions and UI premiums), \$1,000 per week maximum, \$185 per week minimum, benefits and maximum indexed to the consumer price index.

Wage Earners under 65

Pre-OMPP Insured receives IRB for the first two weeks of disability; then IRB less income recoveries from public or private plans.

After 104 weeks, benefits cease unless insured is unable to perform any employment for which he is reasonably suited.

OMPP After one week waiting period, insured receives IRB less income recoveries from public or private plans, except unemployment insurance.

After 156 weeks, benefits cease unless insured is unable to perform any employment for which he is reasonably suited.

TRA After one week waiting period, insured receives IRB less income recoveries from public or private plans, except unemployment insurance. At age 65, the IRB is

replaced by the Income Supplement (IS), equal to 2% of the IRB for each year of disability to a maximum of 35 years. The IS is indexed, payable for the remainder of the disability and is subject to a minimum of \$185 per week.

After 104 weeks, benefits are based on an assessment of reduced earning capacity.

Wage Earners over 65

Pre-OMPP Insured receives IRB for the first two weeks of disability; then IRB less income recoveries from public or private plans.

After 104 weeks, benefits cease unless insured is unable to perform any employment for which he is reasonably suited.

OMPP After one week waiting period, insured receives IRB less income recoveries from public or private plans, except unemployment insurance.

After 156 weeks, benefits cease unless insured is unable to perform any employment for which he is reasonably suited.

TRA After one week waiting period, insured receives IRB, phased down over four years to \$185 per week, not indexed.

Unemployed Less Than 6 months

Pre-OMPP If employed for at least six of the last 12 months, treated as wage earners.

OMPP Treated as wage earners with IRB based on prior employment.

TRA If employed for at least 30 days of the last seven months, treated as wage earners with IRB based on prior employment.

Unemployed Between 6 months and 3 years*

Pre-OMPP A principal unpaid housekeeper receives \$70 per week for up to 12 weeks.

OMPP \$185 per week, not indexed.

TRA If employed for at least 180 days of the last 42 months, \$185 per week for six months, then the IRB based on prior employment; at age 65 the IRB is replaced by the IS.

* Except those who are primary caregivers for dependants.

Unemployed More than 3 years. Retired People and all Other Non-wage Earners over 16. Except Students and Primary Caregivers

Pre-OMPP A principal unpaid housekeeper receives \$70 per week for up to 12 weeks.

OMPP \$185 per week, not indexed.

TRA \$185 per week, not indexed.

Primary Caregivers

Pre-OMPP A principal unpaid housekeeper receives \$70 per week for up to 12 weeks.

OMPP \$185 per week, not indexed.

TRA Primary caregivers who have temporarily left the workforce receive \$185 per week for six months, then either IRB based on prior employment or the Dependant Care Benefits. At age 65 the IRB is replaced by the IS.

Dependant Care Benefits (DCB)

Pre-OMPP No benefits payable.

OMPP For non-wage earners: \$50 per week per dependant, maximum \$200, not indexed.

Dependant care benefits are payable until the last dependant is 16.

TRA For non-wage earners: for the first six months, \$250 per week for the first dependant, \$50 per week for each additional dependant (the DCB); after six months the higher of the DCB or applicable IRB.

For wage earners: reimbursement for incurred child care benefits up to the following per week maximums:

\$ 75 for one dependant

\$100 for two dependants

\$125 for three dependants

\$150 for four or more dependants

Dependant care benefits are payable until the last dependant is 16.

Students

Pre-OMPP No benefits payable.

OMPP \$185 per week after age 16, not indexed.

TRA \$2000 per lost elementary school year; \$4000 per lost secondary school year; \$4000 per lost post-secondary school semester. Those disabled prior to age 16 receive lost school benefits to age 16, then \$185 per week until age 18. At age 18, weekly benefits increase such that they are equal to the IRB at age 30, with the IRB based on the average industrial wage. Those secondary school students injured after age 16 receive lost school benefits to graduation, then the weekly benefits described above, which increase to equal the IRB at age 30. Post-secondary school students receive the weekly benefits described above after a one week waiting period in addition to lost school benefits up to 2 lost semesters. At age 65 the IRB is replaced by the IS. All student benefits are indexed.

Medical Benefits

Supplementary Medical Benefits

Pre-OMPP All reasonable expenses incurred within four years from the date of the accident for necessary medical, surgical, dental, chiropractic, hospital, professional nursing and ambulance service and any other service within the meaning of insured services under the Health Insurance Act, to the limit of \$25,000 per person (including rehabilitation benefits). Has been held to include such things as replacement of eyeglasses broken while being worn and travelling expenses necessary to receive medical attention.

OMPP All reasonable expenses incurred within ten years from the date of the accident (or twenty years less the age of the victim) up to a maximum amount payable of \$500,000 (including rehabilitation benefits) for 1) medical, psychological, surgical, dental, chiropractic, hospital, nursing and ambulance services and the services of physiotherapists; 2) prostheses, dentures, prescription eyewear, hearing aids and other medical or dental devices; 3) other required goods and services, whether medical or non-medical in nature; 4) the travel of a spouse, child, grandchild, parent, grandparent, brother or sister in visiting the insured person during treatment or recovery. Also covered is the reasonable cost of repairing or replacing clothing worn by the insured person at the time of the accident; and prostheses, dentures, prescription eyewear, hearing aids, other medical or dental devices that are lost or damaged in an accident.

TRA All reasonable expenses incurred resulting from the accident for 1) medical, psychological, surgical, dental, optometric, chiropractic, hospital, nursing and ambulance services and the services of physiotherapists; 2) wheelchairs or other mobility devices, prostheses, dentures, prescription eyewear, hearing aids,

orthotics, and other medical or dental devices; 3) other required goods and services of a medical nature; 4) the travel of a spouse, child, grandchild, parent, grandparent, brother or sister in visiting the insured person during treatment or recovery; 5) housekeeping and home maintenance; 6) the reasonable cost of repairing or replacing clothing worn by the insured person at the time of the accident; and prostheses, dentures, prescription eyewear, hearing aids, other medical or dental devices that are lost or damaged in an accident; 7) additional expenses incurred as a result of the accident for clothing and other personal items.

Rehabilitation Benefits

- Pre-OMPP** All reasonable expenses incurred within four years from the date of the accident for services and supplies essential for treatment, occupational retraining or rehabilitation, up to the aggregate (including supplementary medical benefits) limit of \$25,000 per person. Has been held to include essential housekeeping services, and travelling expenses incurred by parents to care for their tragically injured child.
- OMPP** All reasonable expenses incurred within ten years from the date of the accident (or twenty years less the age of the victim) up to a maximum amount payable of \$500,000 (including supplementary medical benefits) for 1) rehabilitation, life-skills training and occupational counseling and training; 2) transportation for the person and an assistant to and from treatment, counseling and training sessions; 3) home renovations.
- TRA** All reasonable expenses incurred for measures to reduce or eliminate the effects of any disability resulting from the injury, and facilitate the reintegration into the family, labour market and the rest of society, including 1) life-skills training,

family counseling, social rehabilitation counseling and financial counseling; 2) employment counseling, vocational assessments, vocational training and academic training; 3) transportation for the person and an assistant to and from treatment, counseling and training sessions; 4) communication aids; 5) home renovations and home devices; 6) vehicle modifications; 7) workplace modifications; 8) other goods and services of a non-medical nature.

Attendant Care Benefits

Pre-OMPP No coverage provided.

OMPP The reasonable cost of a professional caregiver or the amount of gross income reasonably lost by a person other than the insured person as a result of the accident in caring for the insured person, and all reasonable expenses incurred in caring for the insured person; subject to a maximum of \$3,000 a month per person and a total maximum amount of \$500,000.

TRA The reasonable cost of services provided by a qualified caregiver or the amount of gross income reasonably lost by a person other than the injured person as a result of the accident in caring for the insured person, and all reasonable expenses incurred in caring for the insured person; subject to a maximum of \$3,000 a month per person, indexed.

Primacy

Pre-OMPP The insurer is not liable for those expenses payable or recoverable under any medical, surgical, dental, or hospitalization plan or law, except for similar insurance provided under another automobile insurance policy.

- OMPP** The insurer will not pay any portion of an expense for a service that is reasonably available to the insured person under any insurance plan or law or under any other plan or law that will pay the expense; however, the insurer will pay benefits even though the insured person is entitled to or has received benefits under an Act administered by the Ministry of Community and Social Services for Ontario or under similar legislation in another jurisdiction.
- TRA** The insurer is not required to pay for that portion of an expense that is reasonably available to the insured person under any insurance plan or law or under any other plan or law that will pay the expense.

Death Benefits

Death of Head of Household

Pre-OMPP	\$10,000 to the surviving spouse or to the dependants in the case of no surviving spouse, plus \$1,000 to each additional dependant beyond the first.
OMPP	\$25,000 to the surviving spouse or to the dependants in the case of no surviving spouse, plus \$10,000 to each dependant (including spouse, if applicable).
TRA	187.2 times net weekly wage subject to a minimum of \$50,000 and a maximum of \$200,000 to surviving spouse or dependants in the case of no surviving spouse, plus \$10,000 to each dependant (other than spouse); benefits are subject to indexing.

Death of Spouse

Pre-OMPP	\$10,000 to surviving spouse.
OMPP	\$35,000 to surviving spouse.
TRA	187.2 times net weekly wage subject to a minimum of \$50,000 and a maximum of \$200,000 to surviving spouse; benefits are subject to indexing.

Death of Dependant (Other Than Spouse)

Pre-OMPP	\$2,000 to the parent or guardian.
OMPP	\$10,000 to the parent or guardian.
TRA	\$10,000 to the parent or guardian; benefits are subject to indexing.

Benefit Period

- Pre-OMPP Death must ensue within 180 days of the accident or within 104 weeks of the accident if there has been continuous disability during the period.
- OMPP Death must ensue within 180 days of the accident or within 156 weeks of the accident if there has been continuous disability during the period.
- TRA Death must ensue within 180 days of the accident or within 156 weeks of the accident if there has been continuous disability during the period.

Funeral Benefits

Pre-OMPP	Up to \$1,000 for funeral expenses incurred with respect to the death of each insured person.
OMPP	Up to \$3,000 for funeral expenses incurred with respect to the death of each insured person.
TRA	Up to \$6,000 for funeral expenses incurred with respect to the death of each insured person; benefits are subject to indexing.

Quebec Benefits

Pre-OMPP With respect to bodily injury to an Ontario resident resulting from an accident in Quebec, the insurer will pay benefits to such insured person as if the insured person were a resident of Quebec.

OMPP With respect to bodily injury to an Ontario resident resulting from an accident in Quebec, the insurer will pay, at the insured's option, either OMPP benefits or benefits in the same amount and subject to the same conditions as if the person were a resident of Quebec.

TRA With respect to bodily injury to an Ontario resident resulting from an accident in Quebec, the insurer will pay, at the insured's option, either TRA benefits or benefits in the same amount and subject to the same conditions as if the person were a resident of Quebec.

Access to Tort for Personal Injury

Pre-OMPP Unrestricted access to tort.

OMPP Access to tort for injuries involving death, permanent serious disfigurement, or permanent serious impairment of an important bodily function caused by continuing injury which is physical in nature.

TRA Unrestricted access to tort for non-economic damages, subject to 1) a \$15,000 indexed deductible in the case of damages for non-economic loss other than damages for non-economic loss under clause 61 (2) of the Family Law Act; or 2) a \$5,000 indexed deductible in the case of damages for non-economic loss under clause 61 (2) of the Family Law Act.

Bodily Injury Liability

- Pre-OMPP** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law (reference: "access to tort for personal injury") upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in bodily injury or death of any person.
- OMPP** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law (reference: "access to tort for personal injury") upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in bodily injury or death of any person.
- TRA** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law (reference: "access to tort for personal injury") upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in bodily injury or death of any person.

Uninsured Motorist

- Pre-OMPP** The insured is indemnified for all sums the insured is legally entitled to recover (up to the minimum limits for automobile liability insurance in the jurisdiction in which the accident occurs: \$200,000 in Ontario; maximum of \$25,000 for damage to the automobile and its contents) from the owner or driver of an uninsured automobile or unidentified automobile as damages for bodily injury, including death, or damages to the insured automobile or its contents, resulting from an accident involving an automobile.
- OMPP** The insured is indemnified for all sums the insured is legally entitled to recover (up to the minimum limits for automobile liability insurance in the jurisdiction in which the accident occurs: \$200,000 in Ontario; maximum of \$25,000 for damage to the automobile and its contents) from the owner or driver of an uninsured automobile or unidentified automobile as damages for bodily injury, including death, or damages to the insured automobile or its contents, resulting from an accident involving an automobile.
- TRA** The insured is indemnified for all sums the insured is legally entitled to recover (up to the minimum limits for automobile liability insurance in the jurisdiction in which the accident occurs: \$200,000 in Ontario; maximum of \$25,000 for damage to the automobile and its contents) from the owner or driver of an uninsured automobile or unidentified automobile as damages for bodily injury, including death, or damages to the insured automobile or its contents, resulting from an accident involving an automobile.

Underinsured Motorist

- Pre-OMPP** Subject to the limits of the policy, the insured is indemnified for all sums the insured is legally entitled to recover from the owner or driver of an underinsured automobile as damages for bodily injury, including death, resulting from an accident involving an automobile.
- OMPP** Subject to the limits of the policy, the insured is indemnified for all sums the insured is legally entitled to recover from the owner or driver of an underinsured automobile as damages for bodily injury, including death, resulting from an accident involving an automobile.
- TRA** Subject to the limits of the policy the insured is indemnified for all sums the insured is legally entitled to recover from the owner or driver of an underinsured automobile as damages for bodily injury, including death, resulting from an accident involving an automobile.

Property Damage

- Pre-OMPP** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in damage to property.
- OMPP** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in damage to property. The insurer indemnifies the insured as though the insured were a third party for damages caused to the automobile owned by the insured, its equipment, and its contents, in accordance with the Insurance Act and the fault determination rules made under the Act.
- TRA** Subject to the limits of the policy, the insurer indemnifies the insured against liability imposed by law upon the insured for loss or damage arising from the ownership, use or operation of the automobile and resulting in damage to property. The insurer indemnifies the insured as though the insured were a third party for damages caused to the automobile owned by the insured, its equipment, and its contents, in accordance with the Insurance Act and the fault determination rules made under the Act.

Collision

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| Pre-OMPP | The insured is indemnified against damage to the automobile, including its equipment, caused by collision with another object or upset of the automobile. |
| OMPP | The insured is indemnified against damage to the automobile, including its equipment, caused by collision with another object or upset of the automobile. |
| TRA | The insured is indemnified against damage to the automobile, including its equipment, caused by collision with another object or upset of the automobile. |

Comprehensive

- Pre-OMPP** The insured is indemnified against damage to the automobile, including its equipment, caused by any peril other than collision with another object, or upset of the automobile.
- OMPP** The insured is indemnified against damage to the automobile, including its equipment, caused by any peril other than collision with another object, or upset of the automobile.
- TRA** The insured is indemnified against damage to the automobile, including its equipment, caused by any peril other than collision with another object, or upset of the automobile.